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A STUDY ON

UTHIRAVATHA SURONITHAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH I – POTHU MARUTHUVAM DEPARTMENT

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CONTENTS

INTRODUCTION

INTRODUCTION

Siddha is a holistic medical system that gives importance to mental as well as physical well beings of a patient. The word siddha means "established truth". The word siddha comes from the word siddhi that means an object to be attained such as perfection in life or heavenly bliss.

Medicine is all about preventing and treating ailments thus postponing death. As interesting aspect of siddha medicine is its view about death. Thirumoolar defines the ailment of the body and mind as diseases. In the same breath he defines death as disease and hence could be prevented.

”¯¼õÀ¡ø «Æ¢Â¢ü ¯Â¢Ã¡ ÄÆ¢Å÷
¾¢¼õÀ¼ ¦Áö»¡Éõ §°Ã×õ Á¡ð¼¡÷
¯¼õ¨À ÅÇ÷ìÌõ ¯À¡Âõ «È¢ó§¾
¯¼õ¨À ÅÇ÷ò§¾ý ¯Â¢÷ ÅÇ÷ò§¾§É”.

- ¾¢ÕãÄ÷.

Siddhars not only defines death as disease, but they also earnestly tried to prevent death by advocating life style modification and developing new drugs. Siddha drugs are derived from natural sources such as plants, animals and minerals. Plant drugs are its mainstay. The standing instruction of siddhars to medical practitioners is to use herbal drugs first in any ailment, if herbal drugs are ineffective then only advised to go herbomineral preparations.

"«ñ¼ò¾¢ÖûÇ§¾ À¢ñ¼õ
À¢ñ¼ò¾¢ÖûÇ§¾ «ñ¼õ."

"What exists in the world exists in Man". Siddha propounds that the physical structures of the universe and man are basically made up of same stuff, namely five elements. They are nilam (earth), neer (water), thee (fire), kaatru (air) and vin (sky). These five elements are present in different proportions in all living and nonliving

things including drugs and diet articles. Various tissues of the body are the combination of these five elements in different proportions.

The physical function of the body is mediated and maintained by three forces. They are vali, Azhal and iyam. In normal state they are called three forces or three thathu that sustain and nourish the body. In disease state when the three forces are vitiated they are called mukkutrams. When these three forces are in balance one is healthy. When vitiated singly or combination bring about disease.

Seven pillars or fundamental tissues called thathus supporting every living body. When the three forces are vitiated the tissues, disease will occur.

Various siddhars classified disease, one of is Yugi munivar. Yugi munivar classifies disease based on clinical signs and symptoms along with humoral pathology. Yugi classified vatha diseases in to 80 types in "*Yugivaithiya chinthamani*". Uthiravatha suronithan is one of them.

The disease Uthiravatha suronitham has a very close relevance to Rheumatoid arthritis. The disease Uthiravatha suronitham involving multiple system of the body especially musculoskeletal system affected first and then other systems are affected depends upon their immunology. Single and herbal drug therapies are not much useful to cure the disease. So only the author selected herbomineral drug for internal medicine.

Anupoga vaithiya navaneetham said that the ***Rasapralaya chenthuram*** is good for vatha diseases and ***Theraiyar thylavarukka surukkam*** describes the ***Navanatha siddhar thylam*** is useful to reduce inflammatory conditions of vatha diseases. The principle drugs Rasapralaya chenthuram which is useful in chronic musculoskeletal disorder and Navanatha siddhar thylam is an external application reducing inflammatory condition because of its contents has effective anti-inflammatory action.

All the above drugs are found very effective in Uthiravatha suronitham, which I selected for dissertation. This is a small effort on my part in this regard. Further, study in this regard has to be continued in the course of time with Almighty'grace.

AIM AND OBJECTIVES

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The knowledge of preserving one's health sound and thus prolonging life is said to have descended in this modern technological world. The prolonged and uncertain course of the disease "***Udhira Vatha Suronitham***" calls for special emphasis and intended the author to bring an ideal treatment for the disease.

Medicine, as everyone knows is not a mere science, but is an art as well. It is the only want of men with such knowledge of science and its practical practice with efficacious cures on hand.

- The principal aim of the present study is to estimate the efficacy of the siddha drugs ***Rasapralaya chenthuram*** and ***Navanatha siddhar thylam***.
- To ensue a new approach in diagnosis for the disease.
- To know whether the drug has any side- effects or not.

OBJECTIVES:

- ✡ The main objective of the present study is to create awareness about the siddha sciences and to highlight the efficacy of siddha drugs among the public.

- ✡ To collect various informations about "Uthiravatha Suronitham" and to expound the characteristics of etiology, premonitory symptoms, signs and pathogenesis based on both siddha and modern aspects.

- ✡ To access the prevalence of the disease with reference to age, sex, diet habits, socio economic status, family history etc.

- ✡ To highlight the siddha diagnostic principles in diagnosing the disease.
- ✡ To conduct a thorough study on ***Uthiravatha suronitham*** with ***Rheumatoid arthritis.***

- ✡ To make a clinical trial with necessary investigations.

- To have a complete study of the disease Uthiravatha suronitham, under the headings of
  (a) Pori Pulangal (b) Mukkutram
  (c) Udal Kattugal (d) Ennvagai thervugal etc.

- To evaluate the pharmacological study on the trial drug.

- To study the bio-chemical and chemical analysis on the trial drug.

- To evaluate the efficacy of the trial medicine on Antimicrobial activity by in vitro studies.

- To conduct a clinical trial with a well defined proforma on identified patients of Uthiravathasuronitham.

REVIEW

OF

LITERATURE

SIDDHA ASPECT

SIDDHA ASPECT

The things exist in the universe also exist in the human beings. Any adverse changes of these two, even a minute change will be reflecting on the other.

In siddha system of medicine, the physiological function in human system is mediated by three substances viz, Vatham (vali + veli), Pitham (thee), Kabham (neer + man). These three humors maintain the upkeep of the human body through their combined functioning. When deranged, they bring about diseases peculiar to their influence. Uthiravatha suronitham the disease taken for study is one of the vatha diseases described by Yugi vaithya chinthamani.

DEFINITION OF VATHAM:

Vatham is a clinical condition characterized by pain, swelling, pricking sensation and loss of function due to vitiated vatha, which is the principle humour of the body.

‘பொற்றா மரையான் புனைமெய் யரண்காக்கும்
பொற்றா மரையான் புகல்வதென் பொற்றாம்
வளவினிலே யாக்குரம்பை மன்னென்ன மன்ன
வளவினிலே யாக்கும் வளி.”

- தேரையர் யமக வெண்பா.

Vatham is being hailed as the king, who rules the fort (Body) and enables the dwelling of the citizen (Uyir) in the fort. Hence Theraiyar lauds Vatham as the prime force in normal state.

AETIOLOGY: **(நோய் வரும்வழி)**

According to Yugi Vaidhya chinthamani the disease is caused by various factors.

“என்னவே வாதம்தா னெண்பதாகும்
இகத்திலே மனிதர்களுக் கெய்யுமாறு
பின்னவே பொன்தனையே சோரஞ் செய்து
பெரியோர்கள் பிராமணரை துஷனித்தும்
வன்னதே வற்சொத்தி சோரஞ் செய்து
மாதா பிதா குருவை மறந்த பேர்க்கும்
கன்னவே வேதத்தை நிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந் தானே
தான் என்ற கசப்போடு துவர்ப்பு றைப்பு
சாதகமாய் நெஞ்சுகினுஞ் சமைத்த வண்ணம்
ஆனன்ற வாறினது பொசித்தலாலும்
ஆகாயத் தேறளது குடித்த லாலும்
பானென்ற பகலுக்க மிரா விழிப்பு
பட்டினியே மிகவறுதல் பாரமெய்தல்
தேனென்ற மொழியார் மேற் சிந்தை யாதல்
சீக்கிரமாய் வாதமது செனிக்கும் தானே.”

- யூகி வைத்திய சிந்தாமணி.

Excessive sexual indulgence**,** over consumption of bitter, astringent and salty-tasted foods, alcoholism, and daytime sleep, night time over work, starvation and lifting over weight will aggravates Vatham.

Pararasasekaram describes the factors for vitiation of vatham:

“தொழில் பெறு கைப்பு கார்த்தல் துவர்த்தல் விஞ்சுகினுஞ் சோறும்
பழையதாம் வரகு மற்றைய பைந்தினை யருந்தினாலும்
எழில்பெறப் பகலுறங்கி இரவினி லுறங்காததாலும்
மழை நிகர் குழலினாளே வாதம் கோபிக்கும் காணே.”

Consumption of excessive bitters, astringents, salty tasted foods, rancid foods, Daytime sleep and lacking of night sleep vitiates Vatham.

According to Sabapathy Kaiyedu:

‘வளிதரு காய்கி ழங்கு
வரைவிலா தயிலல் கோழை
புளிதயிர் போன்மி குக்கு
முறையிலா அண்டி கேடல்
குளிர்தரு முயக்கம் பெற்றோர்
கடிசெயல் கருவியாமால்.”

வளிக்குற்றத்தைத் தூண்டும் உணவுகளாகிய வாழைக்காய், கிழங்கு, புளி, தயிர், போன்றவற்றை அதிகமாக உண்பதாலும் குளிரில் உலவல், பெண்டிர் மயக்கம் முதலியவற்றாலும் வாதநோய் வரும்.

வாதம் வர்த்திக்கும் காலம்:

‘வாதவர்த் தனைகால மேதோ வென்னில்
மருவுகின்ற ஆனிகற் கடக மாகும்
ஆதவைப் பசியோடு கார்த்திகை தன்னில்
அடருமே மற்றமா தங்க டன்னில்
போதவே சமிக்கின்ற கால மாகும்’.

வளிக்குற்றம் ஆனி, ஆடியில் தன்னிலை வளர்ச்சியும், ஐப்பசி கார்த்திகையில் பிரகோபமும் அடையும். மற்ற மாதங்களில் தன்னிலை அடையும்.

ஆடியாதி யாய் ஐப்பசி ஈறாய்
அனிலமதற் கோரரசியல் காலம்.’

ஷகடகமுதல் துலாம் வரையில் வாதமாகும்
கண்ணாடி யைப்பசியு மதுவே யாகும்.’

- சதகநாடி.

CHARACTERISTICS OF VATHA DISEASE:

“வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்டு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதுசூரிய வாத மனலாகு நடுக்க முண்டாம் பொருள்களாய்த்
தீதனவே நரம்பிசித்து சந்துகள் தோறுங் கடுக்குந் தினமும்தானே”

- தேரன்வாகடம்.

Loss of appetite, pain and redness, fever, cough, insomnia, shivering and pain in all over the joints.

“சந்திரவாதமுடன் குளிர்ந்தெழுந்தே நடுக்குந் சீதவாய்வாம்
முந்திய குத்தி சிவாந் சந்துகள் தோறும் குடைந்து மொளிகள் வீங்கும்
வந்திய தொந்தவாதம் வீக்க முண்டா முடலிற்றி ரண்டாமே”

- தேரன்வாகடம்.

Chillness of the body, rigor, spasm, pain and tenderness over the joints and swelling of the joints.

”காணப்பா வாதமீறில் கால்கைகள் பெருத்து நோவும்
பூணப்பா குடல் புரட்டும் மலசலம் பொருமிக் கட்டும்
ஊணப்பா குளிருங் காய்ச்சல் உடம்பெல்லாம் குத்து வாய்வு
வீணப்பா குதமிறுக்கும் வியர்வையும் வேர்க்கும் தானே.”

- அகத்தியர் வைத்திய காவியம் 1500.

”மேவிய வாதஞ் செய்யும் குணந்தனை விளம்பக் கேளாய்
தாவியே வயிறு மந்தஞ் சந்துகள் பொருந்து நோவாஞ்
சீவிய தாது நாசஞ் செறுத்துடன் சிறுநீர் வீழுங்
காவியங் கண்ணினாளே மலமது கருகி வீழும்”.

- அகத்தியர் ஆயுள் வேதம்.

”எறிய நல்வாத மெறிக்குங் குணங்கேளு
குறியென கைகால் குளைச்சு விலாச்சந்து
பறியென நொந்துடற் பச்சைப் புண்ணாகுமே
புண்ணாய் வலிக்கும் பெருகும் குடலோடித்
தண்ணா மலத்தைத் தம்பிக்கும் போக்காது
ஒண்ணான ஆசனம் உறவே சரக்கிடும்
பண்ணார் குளிர்சீதம் பருத்திடும் வாதமே”.

- திருமூலர் வைத்தியசாரம்.

‘வாதம் வந்துற்ற போது வயிறது பொருமிக் கொள்ளும்
தாதவிழ்ந்திடுப்பு கைகால் சந்துகள் கடுப்புத் தோன்றும்
சீதொரு மலமு நீருந் சிறுத்ததுடன் கடுத்து விழ
மாதவமரை மேல் வந்த வாதத்தின் குணமிதாமே.”

- யூகி முனிவர் பெருநூல் வைத்திய காவியம் 1000.

From the above poetic versions, it is clear that the major characters of vatha diseases are joint pain, swelling present over the joints, difficulty in walking, constipation, burning micturition, oliguria, dyspnoea, flatulence, fever, fatigue, giddiness and nerve weakness etc.

SURONITHA NOI:

சுரோணித நோய் என்பதற்கு T.V. சாம்பசிவம்பிள்ளை அவர்கள் மாதவிடாய் சம்பந்தமாக ஏற்படும் நோய் என்று கூறியுள்ளார்.

Suronitha Vatham is a disorder of menstruation in women characterized by affection in chest and limbs, extreme sensibility to pain, dryness in the skin, pain in nerves accompanied by intense bodily pain.

VATHA SURONITHAM:

Yugi Vaidhya Chinthamani classified Vatha suronitham into 7 types. They are:

1. Vatha Suronitham
2. Uthiravatha Suronitham
3. Sithuvatha Suronitham
4. Vaikithavatha Suronitham
5. Paithiyavatha Suronitham
6. Slethuma vatha Suronitham
7. Udharavatha Suronitham

1. VATHA SURONITHAM:

"அறிந்திட்ட அங்கமெல்லா மெலிவு மாகி
அசைவான தவ்விடங்கள் வீக்கமாகி
நறிந்திடிட நடைகொடா தானிருத்தல்
வலியாகி மொழி மொழிய வீக்கமாகச்
சொறிந்திட்ட தேகமெங்கு மசைவு காணல்
சோற்றின்மேல் னினைவின்றித் தூக்கமாதல்
வறிந்திட்ட வாயதனி னீர்தா னூறல்
வாத சுரோணிதத் தாலும் வகுத்த வாரே"

Emaciation, swelling of joints, restricted movement, pain, tenderness, discomfort, loss of appetite and excessive salivation.

2. UTHIRAVATHA SURONITHAM:

"வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடஞ் சந்து புற வடியும் வீங்கிச்

செய்கிதமாய் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்புண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்
உய்கிதமாம் அசனமது தானும் வேண்டா
உதிரவாதச் சுரோணிதத்தி னுணர்ச்சியாமே"

Pain and swelling in ankle joints, knee joints and all small joints of the hands and toes.

3. PAITHIYAVATHA SURONITHAM:

"உணர்ச்சியாய்ச் சுரோணிதந்தான் மிகவெ தும்பி
ஊக்கமாய்த் தேகமெங்கு மிகவே நொந்து
முணர்ச்சியாய் முழங்கால்கள் முழங்கை யொக்க
முனையான சிறுவிரல்கள் கன்னம் நெற்றி
தணர்ச்சியாய்ச் சந்துசரு வாங்க மெங்கும்
தாட்டிக மாய்க்குடைந்து சுரமு முண்டாம்
பணாச்சியாய்ப் பாண்டதுபோன் மேனி யாகும்
பயித்தியவா தசுரோணிதத்தின் பண்பு தானே"

Pain in all over the body, pain in elbow joints, knee joints, fingers, cheek, forehead, hyper pyrexia, and anemia.

4. SLETHUMAVATHA SURONITHAM:

"பாண்பாக வுடல்குளிர்ந்து ஏறு வீங்கிப்
பதைப்பான விடந்தொட்டாற் பார நோவாம்
திண்பான சிரசுநெற்றி நோக்கா டுண்டாம்
சிலேட்டுமமாய்க் கோழையொடு சுவாச மாகும்
மண்பாக மயக்கமொடு கனவு முண்டாம்
வாய்வரண்டு ருசியில்லா வருத்த மாகும்
நண்பாக நாடியுமே படப டக்கும்
நற்சேட்ப சுரோணிதமாம் நாடுங் காலே"

Chillness of the body, headache, cough with dyspnoea, disturbed sleep, dryness of the mouth, tastelessness and palpitation.

5. UTHARAVATHA SURONITHAM:

"நாடுமே சுரம்வந்து நடுக்க லுண்டாம்
நாவரண்டு தலைநொந்து உடம் பழுந்தி
வாடுமே தேகமெல்லா மனிச்சம் பூப்போல்
மகாவருத்த முண்டாகி மயக்க மாகும்
சாடுமே யடிக்கடிதான் பேதி தானும்
தவிக்குமே தண்ணீர்தா னாட்ட மாகித்
தேடுமே சோற்றின்மேல் நினைவு தானும்
செய்வுதர வாதசுரோ ணிதந்தா னென்னே."

Fever with rigor, dryness of the mouth, headache and analgia, giddiness, passing loose stools, thirst and excessive appetite.

6. SITHUVATHA SURONITHAM:

"வாறான சரீரமெல்லா திறைந்து ஊதல்
மாசற்ற தோல்தானும் திரைந்து போகும்
நாறான நாறுபோல் நரம்பு சுக்கும்
நாக்குத்தான் வழவழத்துக் கோழை யாகும்
தூறான நெருப்புத்தான் பட்டாற்போல
நொந்துமே சடமெல்லாங் கொப்ப ளிக்கும்
வீறான வுரிந்துபின்னை வெதும் பீங்கும்
மிக்கசித்து வாதசுரோ ணித மாமே"

Wrinkled skin, accumulation of phlegm in the throat, vesicles presents all over the body, exfoliation and anasarca.

7. VAIKITHA VATHAM:

"ஆமென்ற வீங்கினதோர் விடத்தில் ரத்தம்
அழுத்தமாய்த் திரண்டுமே எங்கும் பாய்ந்து
ஓமென்று ஒட்டியே திரண்டிருக்கும்
உறுதியாய்த் தொட்டுடனே மெத்தென்றாகும்
தேமென்ற தேகமெங் கணுமு சுக்கும்
சீறியதோ ரிருமலொடு காய்ச்சலுண்டாகும்
பாமென்ற படந்தனிலே திமிருண் டாகும்
பாரமாய் வைகிதமாம் வாதந் தானே"

Swelling, hematomas, cough, hyperpyrexia, numbness in soles and pain in all over the body.

DHANVANTHRI VAITHYAM QUOTES THE CLINICAL FEATURE OF SONITHA VATHA ROGAM AS:

"காணுமே எலிவிடம் போல் கனப்புடன் தடிப்புமாகி
பூணுடம் புளையும் குத்தும் சொறி கனப்புடன்
தோணிருந் துடிப்புத் தேகம் கிள்ளினாற் சோதியது
மானில முலையாய் சுரோணித வாதமாமே"

"கையினிற் கறண்டை தண்ணீர் கட்டுஞ் சதைதோல் வீங்கு
மையறு கருமை செம்மை பெயர்த் தெறிந்தழலும் வீக்கம்
மெய்யினைப் பிளக்கும் வாதம் வியாபிக்கும் உடம்பதாக்கு
மையலர் உடம்பு தம்பிக்கும் வாதசுரொணித மிதென்னே."

Pyrexia and swelling of the body as in rat poison intoxication, pain and tenderness, twitching of muscles, loss of sensation, swelling of wrist and phalanges, black and redness of swelling due to vascular failure and hyperaemia.

PARARASA SEKARAM CLASSIFIES VATHA SURONITHAM INTO FIVE HEADINGS.

Pararasa Sekaram describes Suronitham as,

"விழ்பெறு சுரோணிதந்தான் மிகவுடன் மெலிவுமாகித்
தாழ்வில் சந்துகளே வீங்கித் தகை பெற நடை கொடாமல்
வாழ்வுறு கையுங்காலும் வசமின்றி யழன்று நோவாம்
பாழ்பெறு மணங்கினாளே பயனுறப் பகர்ந்துட்டோமே"

Debility in raktha thathu (anaemia), swelling of peripheral joints, deformed movement of joints, pain in upper and lower limbs.

UTHIRA VATHAM IN PARARASA SEKARAM:

"பக்கமும் மார்பும் கூடப்பற்றியே இழுத்துக் கொண்டு
தொக்கியே மார்பிளைத்து நோதாய் நரம்பிழுத்து
ஒக்கவே சயித்தியங்கள் உயர்ந்துடன் மேலும் காலம்

மிக்குமே உதிரவாதம் என்றிது விளம்பலாமே”

Pain and tenderness of chest and axilla, emaciation, pain and swelling of upper and lower limbs.

CLINICAL FEATURES OF VATHASURONITHAM:

“பகர்ந்திடும் வாதந் தன்னிற் சுரோணிதம் பகரும் காலைப்
புகுந்துடலெங்கும் நொந்து போதவே தோல் திரைந்து
புகைந்திடு நெருப்பு பட்டாற் போலவே கொப்பளித்து
மிகுந்திட வெரிந்து பின்னை வெதும்பியே வீக்கமாகும்.”

Pain and tenderness, exfoliation, eruption as in burns and swelling in joints.

“வீங்கிய விடத்திற்தானே மிகத்திரண்டேகி முட்டி
ஆங்கதை விரலாற் தொட்டே யழுத்திற் மெத்தென்றிருக்கும்
ஓங்கிய வலிப்பு முண்டா முடலினிற் கடுப்பு முண்டாம்
கோங்கெலு முலையினாளே கூறிய குணங் கடேரே.”

Soft swelling on touch and pricking nature of pain.

CLINICAL FEATURES OF SEETHAVATHA SURONITHAM:

“சொற்சீத வுதரவாத சுரோணித முழங்கால் தானும்
பொற்கனைக் காலும் சந்தும் புறவடி தானும் வீங்கி
நற்கோணு விரல்கள் நொந்து நடுபைத்திய வாதத்தில்
உற்பவ குணமுண்டா மூறு நூலில் சொன்னதாமே.”

Swelling of the knee joint, ankle joint and feet, pain and swelling over the phalanges.

CLINICAL FEATURES OF PAITHIYAVATHA SURONITHAM:

“சொன்னதோர் பயித்திய வாத சுரோணிதம் வெதும்பிச் சார்ந்து
வின்னமாய் குடைந்து மின்னே விரல்களி னிறைகளெல்லாம்
தன்னிகப் பொருந்து நோகுஞ் சந்துகளெல்லாம் வீங்கும்
மன்னிய தலையு நொந்து விரிவிழி நெறியுந் தோன்றும்.”

Pain and swelling of the metacarpo phalangeal joints and proximal interphalangeal joints and headache.

CLINICAL FEATURES OF SILETHUMAVATHA SURONITHAM:

"நோற்றிய சேற்பவாத சுரோணித முடல் குளிர்ந்தே
ஏற்றமாய் வீங்கியந்த விடந்தொட்டான் மிகச் சிக்கென்றும்
மாற்றுறப் பொருந்துச் சிக்கும் விரிவிழி மடநல்லாளே
சாற்றிய நல்லோர் வேதத்தினினுரைத் திட்டவாரே."

Chillness of the body, tenderness and swelling of the joints.

CLINICAL FEATURES OF UTHARAVATHA SURONITHAM:

"உரைபெறு உதரவாத சுரோணித முறைக்கும் காலைத்
தரைபெறு வாதத்தூற்றே சுரோணித குணமும்தக்க
விரிவுறு பலித்துவாத சுரோணிதக் குணமுமிக்க
சுரைபெறு உதரவாத சுரோணித குணமு முண்டாம்."

Vitiation of Vatha aggravates the signs and symptoms of Vatha Suronitham.

The term suronitha vatha is also mentioned in Aathma Ratchamirtham, Anuboga Vaithya deva ragasiyam handled the term Uthiravatha surothinam as Sonitha vatha Rogam.

Our text book **Siddha maruthuvam** handle the term Uthiravatha Suronitham as ***Vali Azhal Keelvayu*** as per Literature **Sabhabathi Kaiyedu.**

MUKKUTRA VERUPADUGAL (SIDDHA PATHOLOGY)

'பிணியினுற் பத்தியை பேசுவன் பிணிமுதல்
வாதபித் தங்கப மன் மந்திரி தந்திரி
வீதமா யுடலரண் மெய்ம்புர வரசு செய்
முறை செயுமாதலான்."

- தேரையர் காப்பியம்.

(வாதம் - அரசன், பித்தம் - மந்திரி, கபம் - சேனாதிபதி)

Which highlights that the main factor in the causation of the disease are vatham, pitham and kabham.

VATHAM:

Vatham is the prime force that impacts movement to every living cell in the body. Its dwelling place lies in the bones, muscles, nerves, joints etc. Hence it is responsible for the movement of parts involved in locomotor system. When vatham is affected, the other two pitham and kabham also gets deranged and in turn, they vitiates the other structural and functional elements of the living body called seven Udal thathus.

- **Viyaanan** which is responsible for the voluntary and involuntary movements and nutrition of the tissue gets affected leading to restriction of movements and lassitude.

- **Samaanan** which neutralizes other vitiated vayus gets affected. Further it is needed for normal digestion. So derangement of this vayu produces loss of appetite and indigestion.

- Involvement of Abaana Vayu also plays a main role in the manifestation of signs and symptoms. **Abaanan** which is responsible for distribution and assimilation of nutritional factors gets affected leading to symptoms like constipation.

- **Kirukaran** and **Thevathathan** are also affected because of loss of appetite and sleeplessness respectively.

PITHAM:

The main function of pitham which represents agni is thermogenesis or heat production, metabolism within its limits, process of digestion etc. Its vitiation produces inflammatory changes in joints. Among the five types of Pitham, the following four types get affected in Udhiravatha Suronitham.

- **Ranjaga pitham** which gives colour to blood.
- **Saathaga pitham** which is needed to carry out normal activities.
- In few, **Anal pitham** which is needed for digestion gets affected leading to anorexia.
- **Prasaga pitham** which gives complexion to skin gets affected leading to pallor of skin.

KABAM:

The detoriation of the two main kuttram accompany the Kabha kutram whose structure is Earth + Water and is concerned with the maintenance of smooth working of joints, integration of structural elements of the body into stable structures etc.

- **Santhiga kabham** which is needed for normal maintenance of synovial fluid gets affected.
- **Avalambagam** which forms the basis for all the other four types of Kabham gets affected.
- In few, **Kilethagam** gets affected leading to loss of appetite.

Thus disturbance in Mukkutram produces,

- Pain, swelling of joints, joint stiffness, restriction of movements, loss of appetite and sleeplessness and constipation due to vatham.
- Inflammatory changes in joints like redness, warmth, loss of appetite and anemia due to pitham.
- Erosion of bony margin, osteoporotic changes, increases in the synovial fluid are due to disturbed kabham.

UDALTHATHUKKAL:

Disturbances in vatham, pitham and kabham gets reflected on Udal thathus leading to change in normalcy of body or predisposition to causing disease. The seven udal thathus that supports the body in their state of equilibrium are as follows.

1. Saaram	-	Strengthens the body and mind.
2. Senneer	-	Gives power, knowledge and boldness to the mankind.
3. Oon	-	It gives structure and shape to the body and is responsible for movements of the body.
4. Kozhuppu	-	It lubricates the joints and organs and facilitates their functions.
5. Enbu	-	It protects all the internal organs and forms structural framework of the body.
6. Moolai	-	Resides inside the core of bones. It strengthens and maintains the normal condition of bones.
7. Sukkilam/ Suronitham	-	Meant for reproduction (Male and Female respectively).

In Uthiravatha suronitham, the affected Udal thathus are,

- Saaram - Loss of appetite, lassitude.
- Senneer - Anaemia, presence of RA factor).
- Oon - Muscle wasting, swelling.
- Kozhuppu - Emaciation, restriction of joint movements.
- Enbu - Vague pain and swelling of joints and deformity of joints.

DIFFERENTIAL DIAGNOSIS:

Yugi Munivar in his "Yugi Vaidhya Cinthamani" mentioned about 80 types of Vatha diseases. Among them, the following diseases have joint pain as main clinical feature.

1. Oorusthamba vatham.
2. Malaithakamba vatham.
3. Santhu vatham.
4. Paithiya vatha suronitham.

5. Vatha suronitham.

1. ஊருஸ்தம்ப வாதம் (Oorusthamba vatham):

'ஆமென்ற வாதமது உள்ள டங்கி
அடித்துடைதான் குறங்கிரண்டு மளவாய்ப் பற்றிக்
காமென்ற கைகாலில் விரலுஞ் சுற்றிக்
கனத்துமே சாணியது பொதிந்தாற் போலத்
தேமென்ற சிரந்தனிலே பார முண்டாய்த்
தேகமெங்கு மூதியே திமிருண்டாகும்
நாமென்ற நடக்கொணா வொடுக்க மாகி
நலியூருத் தம்பமது நணுகுங் காணே."

Pain in both the thighs, swelling of fingers and toes, numbness, generalized edema of the body and inability to walk are the symptoms of this disease.

2. மலைத்தகம்ப வாதம் (Malaithakamba vatham)

'கும்பமாங் கையின்மணிக் கட்டு தன்னிற்
குவிந்தரையில் மொத்தைபோ லுரத்துக் காணுந்
தும்பமா மங்கங்கள் துடிப்ப தாகுந்
துவண்டுமே கால் கையு நடுக்க மாகும்
அம்பமா மரைக்குக்கீழ் திமிருண் டாகும்
அதரமே மிகக்கறுத்து வெடிப்புண் டாகும்
வம்பமாம் வாயுந்தான் பரியு நாற்றம்
வருமலைத்த கம்பத்தின் மார்க்கமாமே."

Congestion of wrist joint, twitching, tremors in upper and lower extremities, numbness below the hip joint, fissured lips and passing foul flatus will be seen.

3. சந்து வாதம் (Santhu vatham):

'செய்கைதான் சந்துகளு மிகத் திமிர்ந்து
சடமெங்கு நொந்துமே மிகவ ழற்றி
நைகையாய் நலுத்துமே மயிர்க் கூச்சலிட்டு

நாணியே முன்போல் நடை கொடாது
மைகைதான் மயக்கமொடு வாய்நீருறும்
வரண்டிடுமே நாவுதா னடிக்க டிக்குக்
கைகால்தான் தரணிதனிற் றரிக் கொணாது
சஞ்சரிக்குஞ் சந்துவாம் வாதங் கேளே.''

Pain in joints, body pain, pilo erection, inability to walk, giddiness, dryness of the tongue, excessive salivation and unable to keep the limbs in floor are the features of this disease.

4. பயித்தியவாத சுரோணிதம் (Paithyavatha suronitham)

'உணர்ச்சியாய்ச் சுரோணிதந்தான் மிகவெ தும்பி
ஊக்கமாய்த் தேகமெங்கு மிகவே நொந்து
முணர்ச்சியாய் முழங்கால்கள் முழங்கை யொக்க
முனையான சிறுவிரல்கள் கன்னம் நெற்றி
தணர்ச்சியாய்ச் சந்துசரு வாங்க மெங்கும்
தாட்டிக மாய்க்குடைந்து சுரமு முண்டாம்
பணர்ச்சியாய் பாண்டதுபோல் மேனி யாகும்
பயித்திய வாதசுரோணிதத்தின் பண்புதானே.''

Generalised body pain, severe pain in the knee joint, elbow joint, minor joints, temporo mandibular joint and all other joints, fever and anemia are the features of this disease.

5. வாத சுரோணிதம் (Vatha suronitham)

'அறிந்திட்ட வங்கமெலா மெலிவுமாகி
அசைவான தவ்விடங்கள் வீக்கமாகி
நறிந்திட்ட நடைகொடா தானி ருத்தல்
நலியாகி மொழி மொழிய வீக்கமாகச்
செறிந்திட்டு தேகமெங்கு மசைவு காணல்
சோற்றின்மே னினைவின்றித் தூக்கமாதல்
அறிந்திட்ட வாயதனி னீர்தா னூறல்
வாதசுரோ ணிதந்தானும் வகுத்தவாறே.''

Emaciation, swelling in movable joints, inability to walk, tremors, anorexia, increased sleep and excessive salivation are the features of this disease.

DIFFERENTIAL DIAGNOSIS (NOI NITHANAM)

Uthiravatha suronitham is differentiating from other types of vatha suronitham as follows:

S.NO	DISEASES	SIGNS AND SYMPTOMS
	Uthiravatha suronitham	• Swelling of ankle joints, hip joints and knee joints. • Pain and tenderness of minor joints especially phalanges. • Depression. • Loss of appetite. • Increased vatha and pitha.

DIFFERENTIAL DIAGNOSIS

1.	**Vatha suronitham**	• Emaciation. • Swelling of joints. • Restricted movements. • Joint pain. • Discomfort. • Excessive salivation. • Loss of appetite.

2.	**Sithuvatha suronitham**	• Anasarca. • Wrinkles. • Neural pain. • Glossy tongue. • Sialorrhoea. • Bullous eruption as in burn. • Exfoliation, swelling and warmthness.
3.	**Vaikithavatha suronitham**	• Swelling with hyperemia. • Soft on touch. • Cough with pyrexia. • Irritability.
4.	**Paithiyavatha suronitham**	• Hyperemia. • Tenderness in knee, elbow and smaller joints. • Poly arthralgia. • Pyrexia. • Anemia.
5.	**Slethumavatha suronitham**	• Chillness with abdominal distension. • Severe pain and headache. • Syncope and hallucination. • Dryness of mouth and anorexia. • Tachycardia.
6.	**Utharavatha suronitham**	• Fever with rigor. • Dryness of mouth. • Pain in all over the joints. • Headache, Giddiness. • Diarrhoea. • Excessive thirst.

		• Hungry.

NAADI PATHOLOGY:

‘திருத்தமாம் வாதத் தோடே தீங்கொடு பித்தஞ்சேரில்
பொருந்துகள் தோறும் நொந்து’’.

- குணவாகடம் நோயின் சாரம்.

‘காணப்பா வாதமீறில்
கால்கைகள் பொருந்தி நோகும்.’’

- காவிய நாடி.

Vitiation of vatham and pitham produces joint pain.

‘வாதத்தின் குணமே தன்னில்
வயிறது பொருமிக் கொள்ளும்
தாதத்தில் மேனி கைகால்
சந்துமே கடுப்பு தோன்றும்.’’

- குறியடையாள நாடி.

Increases vatham results abdominal distension and pain in the joints.

‘அறிந்துபார் வாதமே தனித்ததானால்
அன்னம் போல் நடக்குமப்பா நாடிபாரு
சரிந்திடவே கால்முடக்கும் போது காட்டும்’’

- அகத்தியர் ரத்தினச் சுருக்கம்.

Vitiated vatham causes difficulty in walking and impaired functioning of the lower extremities.

‘அறியும் வாதத்தில் அடுத்த பித்தமாயின்
குறியதுதான் வாயும் குழறும் நெறியால்
குளிருங் கால்வீங்கும் குடல்புறட்டும் விம்மித்

தெளிவில்லை புத்தியெனச் செப்பு''

- கண்ணுசாமியம் என்னும் வைத்திய சேகரம்.

MODERN ASPECT

MODERNASPECTS

ANATOMY:

Articulations or Joints are specialized anatomical structures at which the ends of certain bones are joined or the borders of other bones are juxtaposed. These osseous junctions are secured by ligaments, fibrous capsule and other binding tissues, which restrict movements or permit varying degrees of movements. Joints vary widely in their structure, frequently presenting unique morphological features, adapted to specific functional requirements.

JOINT CLASSIFICATION:

Depending on the morphological characteristics of the joints, they are classified into,

- Fibrous Joints - Many of which are immovable and are united by fibrous tissue (synarthroses).
- Cartilaginous Joints - Slightly movable, the union between the bones occurs via cartilage (amphiarthroses).
- Synovial Joints - Freely movable (diarthroses).

SYNOVIAL JOINTS:

Synovial Joints are highly evolved articulations which permit free movements. Because the human lower limbs are concerned with locomotion and the upper limbs provide a great versatility of movements, it is not surprising that most of the joints are of the synovial type. The integrity of synovial joint results from its ligaments and capsule which bind the articulation externally and to some extent from the surrounding muscles. The contiguous bony surfaces are covered with hyaline cartilage and the joint cavity is surrounded by a fibrous capsule, the inner surface of which is lined by a synovial layer containing cells that are thought to secrete the viscous lubricating synovial fluid.

STRUCTURES:

Articular Cartilage firmly adherent to the articular surfaces of majority of bones. They are either innervated or supplied with blood vessels.

Ligaments are composed mainly of bundles of collagenous fibres. They are pliant and flexible to allow perfect freedom of movement.

Articular Capsule forms a complete envelope for a freely movable joint and consists of external fibrous layer and internal synovial layer. The fibrous layer gets attached to the periosteum along the entire circumference of the articular end of each bone. Its flexibility permits movement, yet its strength protects joint from dislocation.

Synovial Membrane covers the inner surface of the fibrous capsule, forming a closed sac called the synovial cavity. It is composed of loose connective tissue and it has a free surface of finger like projection called the Synovial villi. The synovial cavity contains only enough synovial fluid to moisten and lubricates the synovial surface, but in an injured or inflamed joint, the fluid may accumulate in painful amounts.

PHYSIOLOGY OF JOINTS:

As joint is a very well engineered structure, frictionless motion is provided by the combination of a smooth articular cartilage as well as lubrication of both the articular cartilage and the synovial membrane together which make up the entire surface area of the inside of the joints. Shock absorption to the joint is provided by the combination of structures, including articular cartilage, subchondral bone and soft tissue structures (Joint Capsule and Ligaments). Because of its re-silent nature and ability to compress, articular cartilage in itself is a good shock absorber but its thickness and overall volume is far less than bone or soft tissues. Hence the soft tissues and bones are the primary shock absorbers in joint and any disease that affect bones or soft tissue is going to interfere with this shock absorption. Re-silence of the soft tissue is important for normal motion as well as shock absorption. Hyaluronic acid provides lubrication to

the synovial membrane surface in addition to another protein structure called Lubricin and is involved in the lubrication of articular cartilage. The substance moving over the surface of joints is called Boundary Lubrication. A second mechanism of lubrication of cartilage is affected by fluid being squeezed out of the cartilage on to the surface when weight bearing occurs.

RHEUMATOID ARTHRITIS:

Rheumatoid arthritis embraces an amazing array of hereditary and acquired disorder with a wide variety of clinical features. Rheumatoid arthritis is a disease of unknown cause, and the current thinking is that interplay between genes, infectious agent contributes to initiate an autoimmune disease mechanism that results in inflammation, dominantly at limb joints, often with destructive features. The term rheumatoid arthritis was first used by sir Archibald Garrod to describe a chronic non-suppurative inflammatory arthropathy (Rheuma - flux, eidos - resemblance), a condition resembling rheumatism.

We are all familiar with the saying regarding rheumatic fever, “It licks the joints but bites the heart.” Contrarily it can be said of rheumatoid arthritis, “It bites the joints, licks all other systems of the body and barks at the treating physician.”

DEFINITION:

Rheumatoid arthritis is a highly inflammatory polyarthritis often leading to joint destruction, deformity and loss of function. Additive, symmetric swelling of peripheral joints is the hallmark of the disease. Extra-articular features and systemic symptoms can commonly occur and may antedate the onset of joint symptoms. Chronic pain, disability and excess mortality are unfortunate sequelae.

FREQUENCY:

The worldwide incidence of RA is approximately 3 cases per 10,000 population and the prevalence rate is approximately 1%. First degree relatives of patients with RA have an increased frequency of disease (2-3 %). Disease concordance in monozygotic twins is approximately 15-20% suggesting that non-genetic factors play an important role.

AETIOLOGY:

The cause of rheumatoid arthritis is unknown. Genetic, environment, immunologic, and infectious factors may play significant roles. Socioeconomic, psychological and lifestyle factors may influence disease outcome.

1. **Age:**

The frequency of RA increases with age and peaks in persons aged 25-50 years. Nevertheless, the disease is observed in both elderly persons and children.

2. Sex:

Women before menopause are affected 3 times more often than men.

After the menopause the frequency of onset is similar between the sexes, suggesting an etiological role for sex hormones.

3. Genetic:

- The disease is familial but sporadic. In occasional families it affects several generations.
- **HLA types**: There is strong association between susceptility to RA and certain HLA heliotypes. HLA – DR4 which occurs in 50 – 75% of patients. In addition, HLA-DR1 also carries this shared epitope and confers risk in certain areas.

4. Environmental:

For many decades, numerous infectious agents have been suggested to induce RA. Among these are Mycoplasma organisms, Ebstein-Barr and Rubella viruses and others.

This supposition is further supported indirectly by the following:

- Occasional reports of flulike disorders preceding the stage of arthritis.
- The inducibility of arthritis in experimental animals with different bacteria or bacterial products (eg, streptococcal cell walls)
- The presence of bacterial products including bacterial RNA in patient joints.
- The activity of several agents that have antimicrobial effects as disease-modifying drugs (e.g. antimalarials).

5. Immunologic:

All of the major immunologic elements play a fundamental role in the initiation, propagation and maintenance of the autoimmune process of RA. The exact orchestration of the cellular and cytokine events that lead to pathologic consequences, such as synovial proliferation and subsequent joint destruction, is complex. It involves T and B Lymphocytes, antigen-presenting cells (e.g. B cells, macrophages, dendritic cells) and numerous cytokines. Aberrant production and regulation of both pro and anti-inflammatory cytokines and cytokine pathways are found in RA.

T cells are assumed to play a pivotal role in the initiation of RA and the key player in this respect is assumed to be the Th1 CD4 cells.

These cells may subsequently activate macrophages and other cell populations, including synovial fibroblasts. The latter 2 populations are the main producers of the proinflammatory cytokines TNF-alpha and IL-1 that appears to be the major driving forces of inflammation.

B cells are important in the pathologic process because they may serve as antigen-presenting cells and activated T cells produce numerous autoantibodies (e.g. RF, Citrullinated proteins) and secrete cytokines.

6. Onset:

Mostly onset is insidious.

75 % - insidious onset.

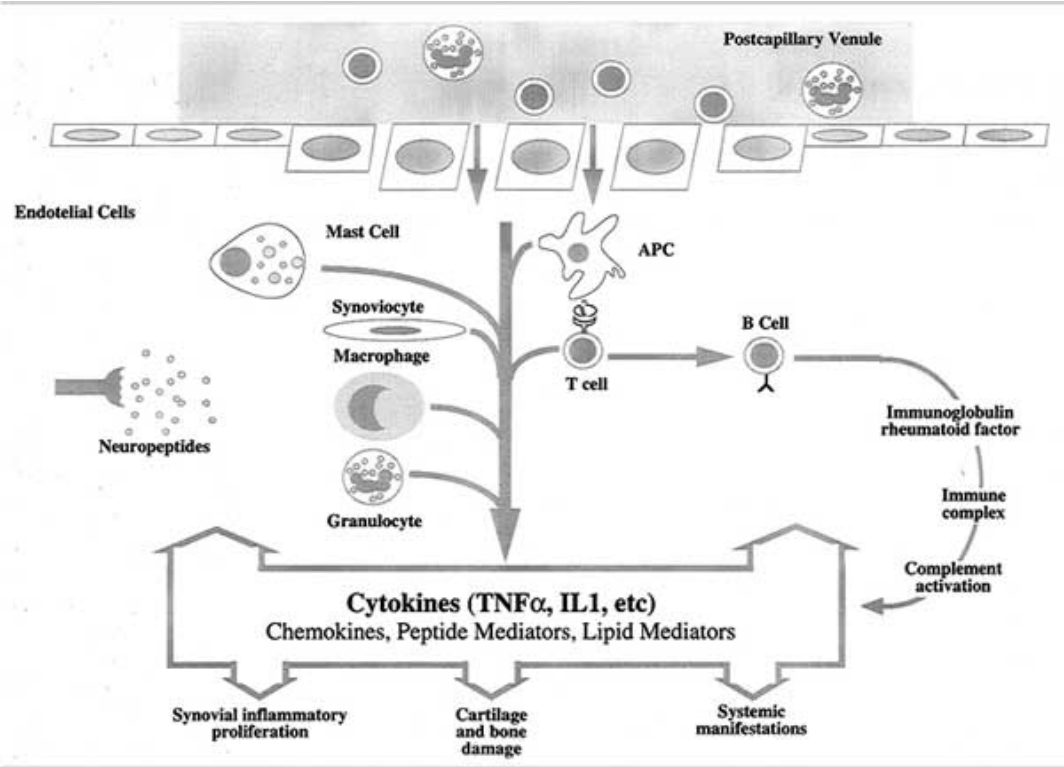
15 % - Acute onset.

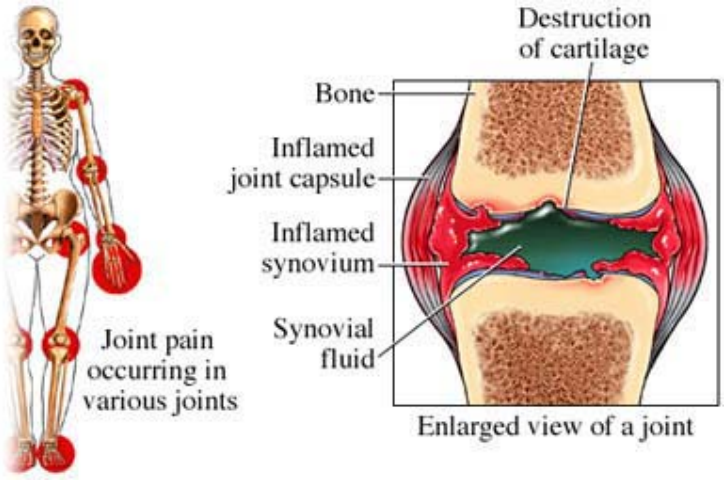
10 % – Sub acute onset.

IMMUNOPATHOLOGY:

The pathological hallmark of RA is synovial membrane proliferation outgrowth associated with erosion of articular cartilage and subchondral bone. In early stages, the most obvious histological changes are confined to the synovial microvasculature which shows evidence of endothelial damage, infilteration by polymorpho nuclear leucocytes and obliteration by thrombus. In chronic phase, polymorpho nuclear leucocytes are less

obvious but the synovium is infilterated by large number of inflammatory cells (macrophages, T&B lymphocytes, dendritic cells, plasma cells). The plasma cells in the subsynovium synthesize large quantities of immunoglobulin, much of which is IgM and IgG rheumatoid factor. They have the ability to form immune complexes that can activate complement and is important in either initiating or prolonging local inflammation within the joint. Antigen-Antibody complexes formed within the joint cavity can become trapped in hyaline cartilage and fibrocartilage, where they cause changes in matrix macro molecules. Ultimate destruction of cartilage, bone, tendons and ligaments probably results from proteolytic enzymes, metallo proteinases.





CLINICAL FEATURES:

Patients often present with constitutional complaints including **malaise, fever, fatigue, weight loss and myalgias.** Most patients with the disease have an insidious onset. It may begin with systemic features, such as fever, malaise, arthralgias and weakness, before the appearance of joint inflammation and swelling.

JOINT FEATURES:

RA is typically a **distal, symmetrical, small joint polyarthritis** involving **proximal interphalangeal and metacarpophalangeal joints of the hands, wrist, metatarsophalangeal joints, ankles, knees and cervical spine**. **The shoulders, elbows and hips are less frequently involved**, but can be a major source of morbidity. Any synovial joint in the body may be affected. In addition periarticular synovial structures such as bursae and tendon sheaths are commonly inflammed.

Most common symptoms described by patients are **pain and pronounced stiffness.** The later frequently exhibits a diurnal rhythm, worse on rising in the morning and then recurring towards the evening, perhaps reflecting the diurnal variation in plasma cortisol levels. **The affected joints are frequently tender, swollen and warm and there may be limitation of both active and passive movements.** Progressive destruction of the articular cartilage, subchondral bone and periarticular soft tissues eventually combine to produce the characteristic deformities seen in long standing RA.

UPPER LIMBS:

Hands and wrists:

Early in the disease there may be soft tissue swelling around the affected joints. Involvement of the proximal interphalangeal joints gives a **spindle shaped appearance to the fingers and soft tissue swelling** can be observed over the ulnar styloid and in the 2nd and 3rd metacarpophalangeal joints (MCP). **Tenosynovitis** of the long flexor tendons in the palm of the hand may exacerbate stiffness of the fingers and cause "Trigger finger". Similar synovitis of the wrist within the flexor retinaculam may cause **compression of the median nerve with the typical features of Carpal Tunnel Syndrome.** Persistent synovitis with erosion of the articular surfaces, weakening of the joint capsules and muscle weakness, with or without tendon rupture will inevitably lead to deformities.

Ulnar deviation and subluxation of the fingers:

Occurs as a result of instability of the metacarpophalangeal joints. The fingers may tend to drift in an ulnar direction because of the ulnar vector of the action of both flexor and extensor finger tendons.

Swan Neck deformity:

Develops from **hyper extension of the proximal interphalangeal joints** in conjunction with **flexion of distal interphalangeal joints** with subsequent contracture of the intrinsic muscles which become extensors rather than flexors of the proximal interphalangeal joints.

Boutonniere (Button-Hole) deformity:

Results from **flexion contractures of proximal interphalangeal joints associated with hyper extension of distal interphalangeal joints**. A similar process at the carpometacarpal joint of the thumb may give rise to the Z-thumb deformity.

Piano-Key sign:

Can be detected when weakening of the distal radio ulnar ligament by synovitis allows the distal ulna to migrate dorsally so that it overrides the radius. The ulna can be depressed by pressure like a piano key.

Elbows and Shoulders:

Involvement of the elbows is less common than of the wrist but severe destruction may occur, leading to pronounced deformity and disability. There may be inflammation of the subacromial bursae or supraspinatous tendon in addition to glenohumeral joint synovitis, producing a typical painful arc syndrome.

LOWER LIMBS:

Feet and Ankles:

Active synovitis of the metatarso phalangeal joints leads to spreading of fore foot. Subluxation of metatarsal heads into the soles results in cockup and valgus deformities causing painful walking and difficulty with foot wear. Pain arises in the ball of foot (metatarsalgia). .

Knee :

Involvement of knee is an important cause of disability from an early stage of disease. Synovial proliferation is usually most obvious in the supra patella pouch and there may be pronounced wasting of the quadriceps as a result of reflex muscle inhibition. Synovial effusion typically produces posterior knee pain in the early stages by stretching the posterior capsule of the joint. This may lead to the development of a popliteal cyst (Baker's cyst). Valgus deformity of the knee is usual consequence of loading.

Hip:

Involvement of hip is uncommon. Pain is usually present in the groin; buttock and abduction of hip are reduced ultimately leading to fixed flexion deformity of the joint.

AXIAL SKELETON:

Spinal involvement is limited to upper cervical articulation. Neckpain and stiffness are common and leads to erosion of bones and ligaments in cervical spine. Vertebral arteries may also be compressed resulting in vertebro basilar insufficiency with vertigo or syncope especially on downward gaze. The risk of cord compression is greatest in those with a subluxation exceeding 8mm and there is also vertical subluxation of the atlanto axial joint.

Symptoms suggestive of atlantoaxial disease include high cervical pain radiating to the occiput and temporal regions, exacerbated by neck movements.

- Brisk tendon jerk.
- Positive Hoffman sign.
- Upgoing plantar response.
- Loss of proprioception.
- Vibration sense indicates damage to posterior column.

OTHER JOINTS:

- ❖ Hoarseness of the voice may occasionally be caused by effusion within the cricoarytenoid joints.
- ❖ Temporomandibular joint disease causes pain on chewing and restricts opening of mouth.

EXTRA ARTICULAR FEATURES:

These tend to be more numerous and severe in those with high titers of rheumatoid factor in blood. Three major pathological phenomena dominate the disease.

- Inflammation of membranes
- Nodule formation
- Vasculitis.

A. RHEUMATOID NODULES:

Subcutaneous and intracutaneous nodules are the hall mark of the disease in ¼ of the patients. They are firm, non-tender swellings that occur on the extensor surface of the fore arm and olecranon sites, where repeated minor trauma could initiate their formation. They may also develop in many other tissues including eye (Scleromalacia), pleura, pericardium, parenchyma of lungs and heart.

B. HAEMATOLOGICAL MANIFESTATION:

Anaemia:

Moderate normochromic normocytic anaemia is a finding in active RA. Factors that are related to the inflammatory process probably contribute to this anaemia. There may be ineffective erythropoiesis and red blood cell survival is reduced. Iron binding capacity is typically reduced in active rheumatoid arthritis.

Thrombocytosis, Leukopenia is a finding in patients with Felty's Syndrome.

Vasculitis:

Intimal hyperplasia of the small terminal digital vessels causes very limited cutaneous lesions (Nail fold infarcts, rashes, splinter haemorrhages). In contrast severe life threatening tissue infection may develop when there is involvement of large blood vessels by leucocytoclastic or necrotizing vasculitis.

C. LUNG INVOLVEMENT:

1. Pleurisy:

The fluid has more protein, low glucose; low complement levels and is typically positive for RA factor.

2. Nodules (Caplan syndrome):

More in upper zone than lower zones. Cavitation may occasionally lead to haemoptysis.

3. Pulmonary fibrosis:

It causes progressive dyspnoea, clubbing of fingers, fine late inspiratory crepitations.

4. Obliterative Bronchiolitis:

Acute onset of breathlessness. Many patients have evidence of airway obstruction. Bronchiectasis also appears to be more common.

D. CARDIAC INVOLVEMENT:

Pericardial effusion can be found by ultra-sonography in patients with seropositive nodular disease. Constrictive pericarditis is more common and presents with dyspnoea, right side heart failure and peripheral oedema.

Valvulitis: Granulomatous thickening of the cusps of the aortic valve occurs more frequently than in the mitral valve, rarely producing incompetence.

E. EYE INVOLVEMENT:

Common in RA and may be due to localized tissue involvement.

Episcleritis:

Appears as a raised lesion in the anterior sclera with hyperaemia of the deeper layers.

scleritis:

- Is less common and may leads to progressive thinning of the sclera (Scleromalacia) and even perforation.
- Keratoconjunctivitis sicca (dry eyes) due to secondary Sjogren's syndrome.
- Corneal melting is a rare manifestation. Clinical features are pain, redness and blurred vision with corneal thinning.

F. PERIPHERAL NERVE INVOLVEMENT:

Peripheral neuropathies can be produced by proliferating synovium causing compression of nerves. A mild glove and stocking sensory neuropathy is relatively common in RA.

G. MUSCLE INVOLVEMENT:

Is attributed to the reflex inhibition and wasting resulting from severe joint pain.

H. BONE INVOLVEMENT:

Juxta – articular osteoporosis is an early feature. A small proportion of patients may develop osteomalacia.

I. FELTY'S SYNDROME:

Lymphadenopathy is common. It is more obvious in patients with Felty syndrome (Rheumatoid arthritis, Splenomegaly, Leucopenia). Other features include anaemia, thrombocytopenia, persistent vasculitic leg ulceration, cutaneous pigmentation, weight loss and recurrent infection.

DIAGNOSIS:

The American College of Rheumatology (1988 revised) developed the following criteria for the classification of rheumatoid arthritis.

1. Morning Stiffness: This occurs in and around the joints and lasts at least 1 hour before maximal improvement.

2. Arthritis of 3 or more joint areas: At least 3 joint areas simultaneously have soft tissue swelling or fluid (not bony overgrowth) observed by a physician.

3. Arthritis of hand joints of at least one area swollen in a wrist, MCP, or PIP joint.

4. Symmetric arthritis with simultaneous involvement of the same joint areas on both sides of the body. Bilateral involvement of PIPs, MCPs, and MTPs is acceptable without absolute symmetry.

5. Rheumatoid nodules: Subcutaneous nodules are present over bony prominences or extensor surfaces or in juxta-articular regions.

6. Serum Rheumatoid Factor: Abnormal amounts of serum RF are demonstrated by any method for which the result has been positive in fewer than 5% of healthy control subjects.

7. Radiographic changes typical of RA on posteroanterior hand and wrist radiographs, which must include erosions or unequivocal bony decalcification localized in or most marked adjacent to the involved joints. Osteoarthritic changes alone do not qualify.

A patient can be classified as having RA if 4 of 7 criteria are present. Criteria 1- 4 must be present for at least 6 weeks, and a physician must observe criteria 2 - 5.

COMPLICATIONS:

RA is not fatal, but complications of the disease may shorten survival by a few years in some individuals. In general, RA is progressive and cannot be cured. In some, the disease gradually becomes less aggressive and symptoms may even improve. However, if bone and ligament destruction and any deformities have occurred, the effects are permanent. According to one survey, 70% of patients with RA believe that the disease prevents them from living a fully productive life.

Lymphoma and other cancers: Alterations in the immune system associated with RA may play a role in the higher risk for lymphoma observed in patients with RA. Aggressive treatments for RA that suppress the immune system may help preventing this cancer, but more research is needed to evaluate this possibility. Other cancers that may occur with increased frequency in patients with RA include prostate and lung cancers.

Macrophage Activation Syndrome: This is a life-threatening complication of RA and requires immediate treatment. Patients should be aware of symptoms, which include persistent fever, weakness, drowsiness, and lethargy.

PROGNOSIS:

The following factors at presentation are associated with a poor prognosis.

- Higher baseline disability.
- Female gender.
- Involvement of Metatarsophalangeal joints.
- Positive Rheumatoid Factor.
- Disease duration of over 3 months.

- Disease that remains persistantly acting for more than a year is likely to lead to joint deformities and disability around 80%.

INVESTIGATIONS:

No pathognomonic test is available to confirm the diagnosis of RA; instead, the diagnosis is made using clinical, laboratory, and imaging features.

HAEMATOLOGICAL:

1. Normochromic normocytic anaemia is frequently present in active RA.
2. The WBC count is usually normal, but a mild leucocytosis may be present.
3. Eosinophilia when present usually reflects severe systemic disease.
4. The Erythrocyte Sedimentation Rate is increased in nearly all patients with active RA.
5. The levels of acute phase reactants including Ceruloplasmin and C-reactive protein are also elevated.
6. Increased IgG, IgM, IgA and gamma globulin.

IMMUNOLOGICAL:

1. **Rheumatoid factor (RF):**

The presence of rheumatoid factor does not establish the diagnosis of RA, but can be of prognostic significance. RA factor are auto antibodies reactive with the Fc position of IgG. Presence of RF can be detected by several tests such as Rose Waaler, Latex fixation test and other slide agglutination test. The test can be employed to confirm a diagnosis in individuals with suggestive clinical presentation and if present in high titer, to designate patients at risk for severe systemic disease. Other conditions associated with RA are SLE, chronic liver disease, sarcoidosis, interstitial pulmonary fibrosis, hepatitis B, tuberculosis, syphilis and malaria.

2. **Antinuclear antibodies**: These are present in approximately 40% of patients with RA.

3. **Newer antibodies (anti-CCP):** Recent studies of antibodies to cyclic citrullinated peptide suggest a sensitivity and specificity equal to Rheumatoid factor.

SYNOVIAL FLUID ANALYSIS:

- Colour - Yellow
- Clarity - Cloudt
- Viscosity - Reduced
- Mucin clot - Poor
- WBC - > 3000 µL to 50000 µL
- Total protein - >3 gm.Microscopic feature - RA cell.
- Polymorpho neuclear leucocyte - >70.

SYNOVIAL BIOPSY:

Villus formation with thickening of synovial layer and infiltration with abnormal cells.

RADIOGRAPHIC EVALUATION:

- Diagnosis is supported by a characteristic pattern of abnormalities including tendency towards symmetric involvement.
- Soft tissue changes, juxto-articular osteoporosis may become apparent within weeks of onset.
- Loss of articular cartilage and bone erosion develop after months of sustained activities. Joint space changes, alignment, deformities, subluxation, bony ankylosis develops in the late stage.

ARTHROSCOPY:

In acute RA synovium is edematous, diffusely erythematous and friable. In more chronic condition it becomes thickened.

MRI: Used in patients with abnormalities of the cervical spine.

SONOGRAPHY:

This allows recognition of effusions in joints that are not easily accessible. High resolution ultrasound images may allow visualization of tendon sheaths, changes and degree of vascularization of the synovial membrane and even erosions.

BONE SCANNING:

Findings may help to distinguish inflammatory from non-inflammatory changes in patients with minimal swelling.

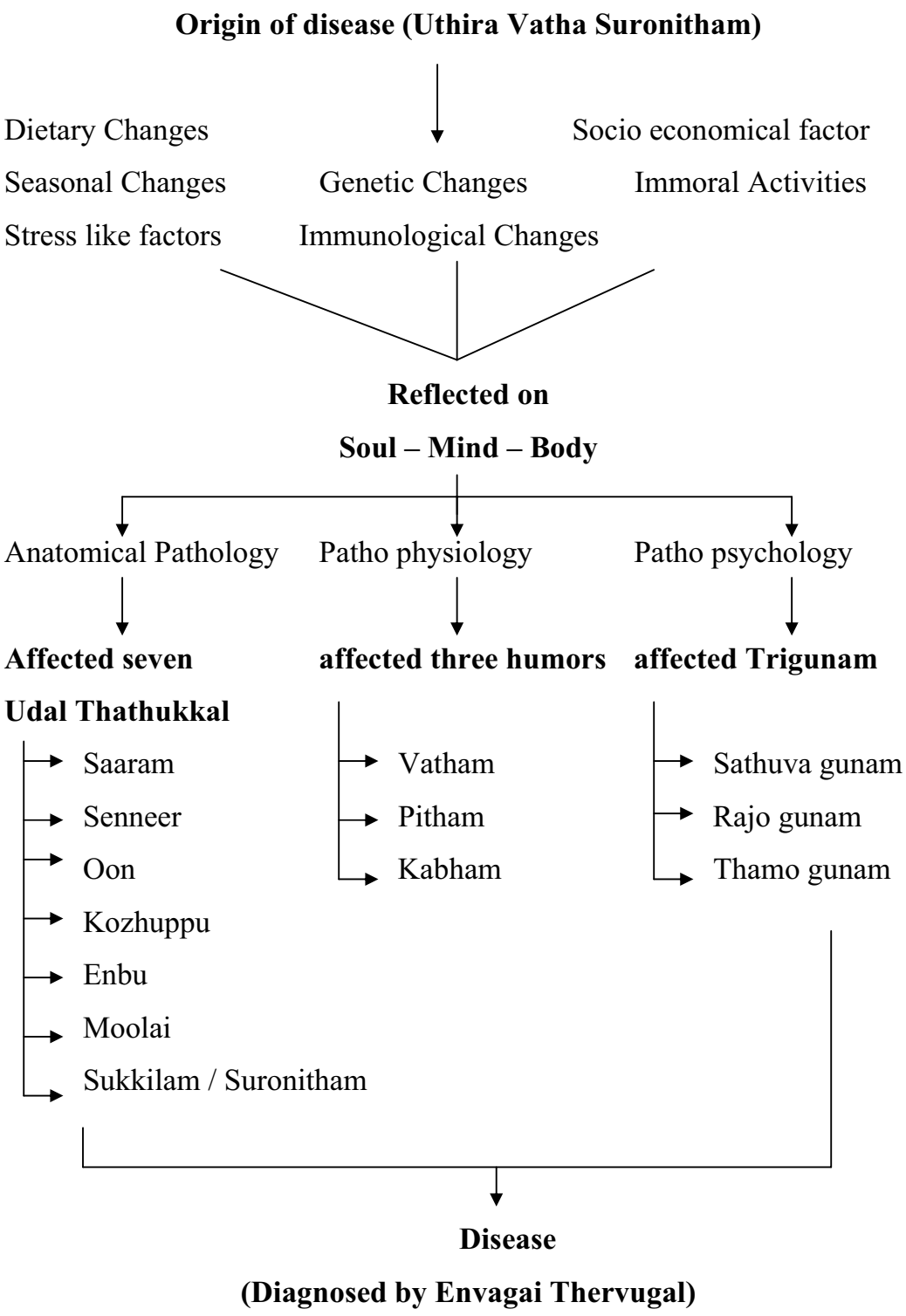
DENSITOMETRY: Findings are useful to diagnose changes in bone mineral density indicative of osteoporosis.

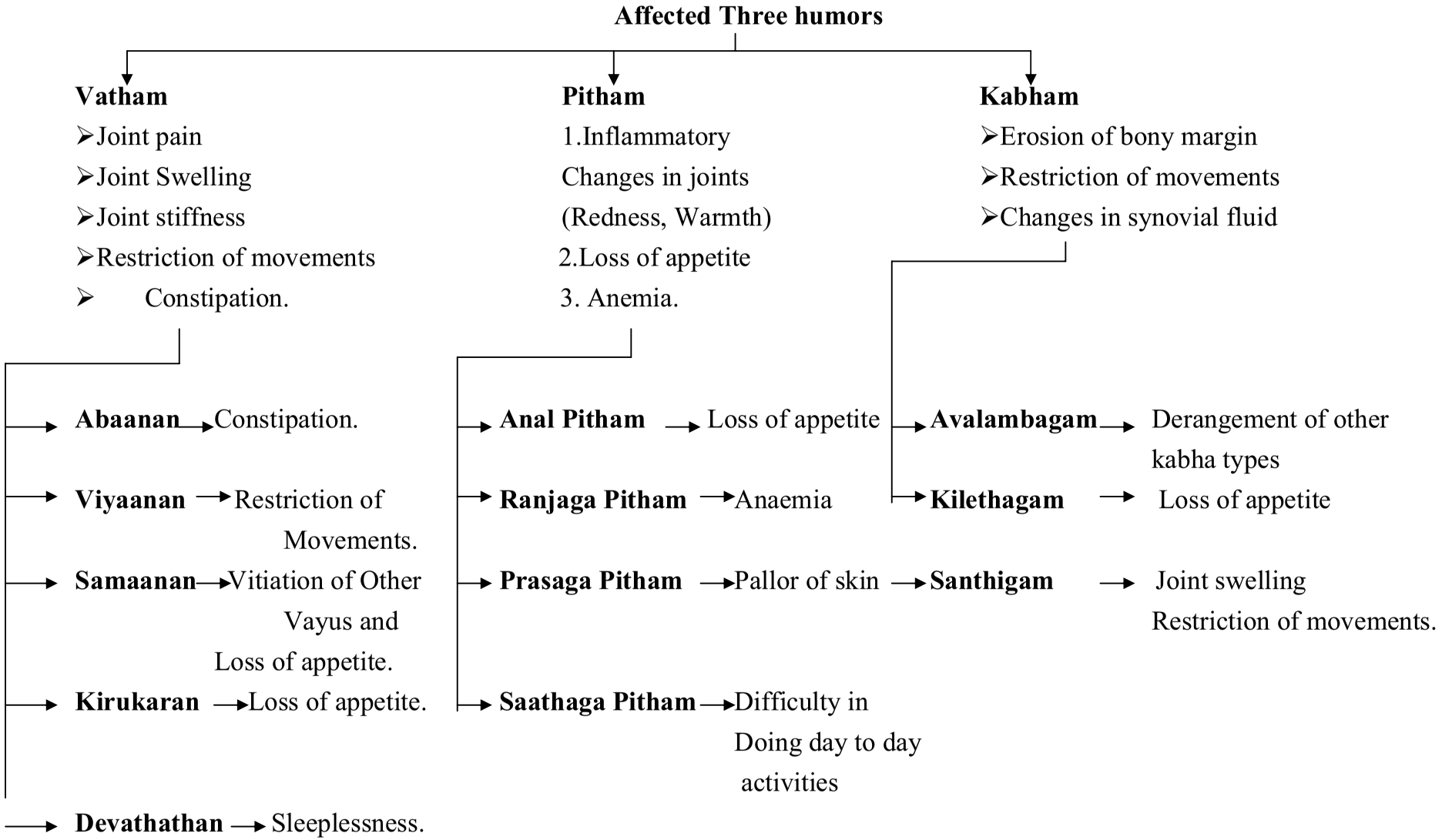
OTHER TESTS: HLA – DR4 may constitute a helpful marker in early undifferentiated arthritis.

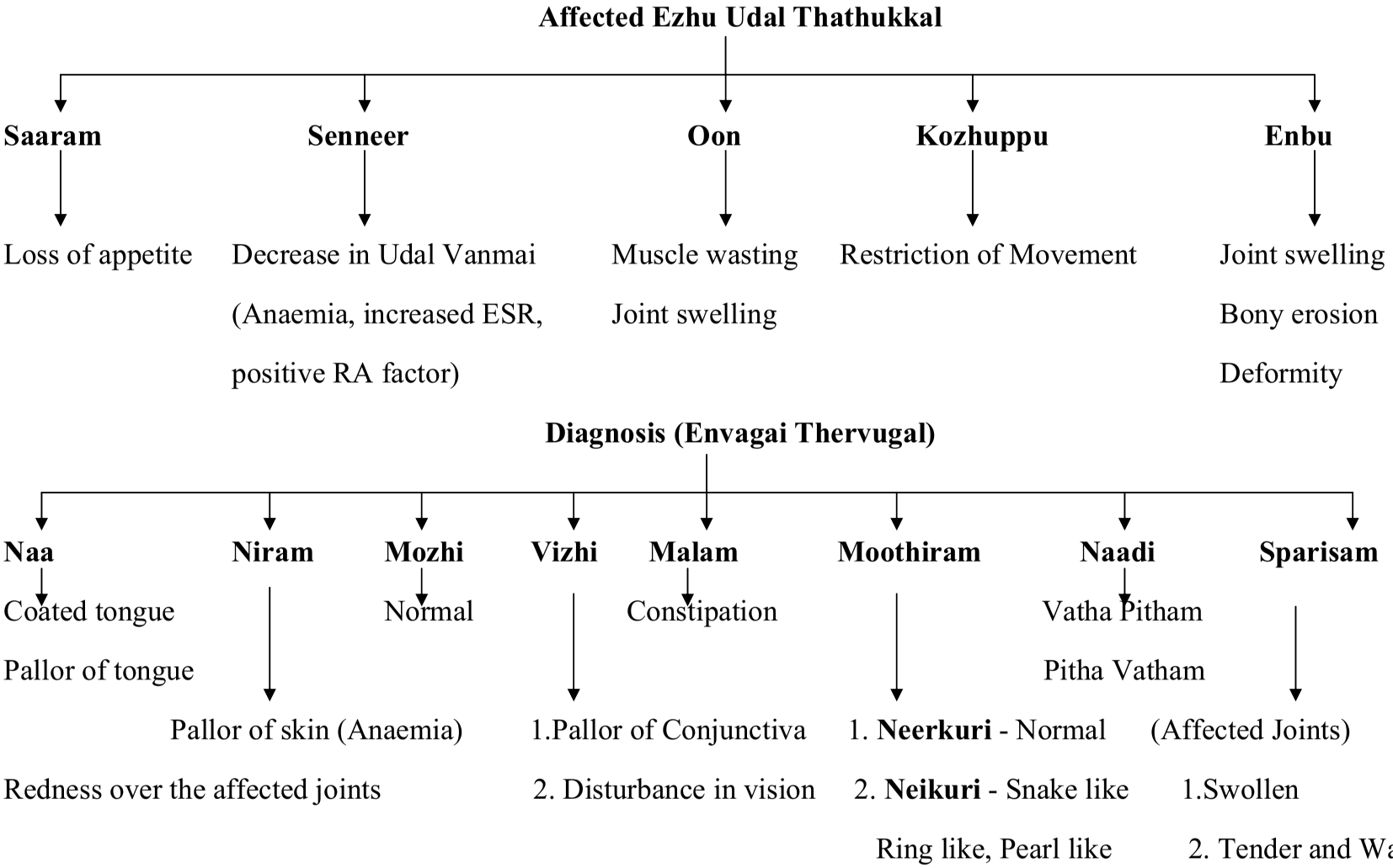
OTHER PROCEDURES: Joint aspiration and biopsies (skin, nerve, rectum and kidney) maybe considered if vasculitis is suggested.

DIFFERENTIAL DIAGNOSIS:

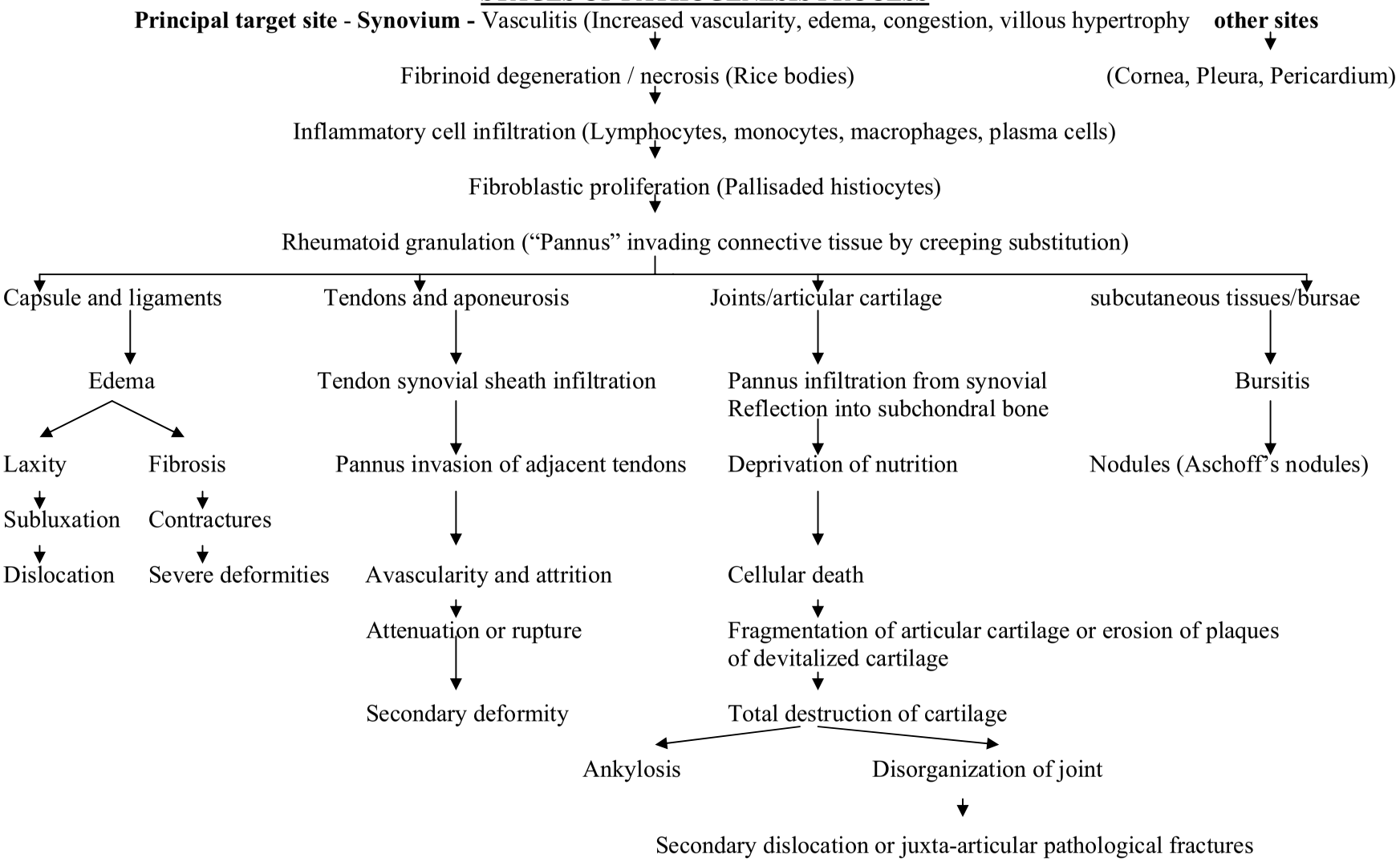
1. Acute viral arthritis (Rubella, Hepatitis B, Parvovirus)
2. Bacterial endocarditis
3. Acute Rheumatic fever
4. Sarcoidosis
5. Reactive arthritis (Reiter's disease)
6. Psoriatic arthritis
7. Inflammatory bowel disease
8. Systemic Lupus Erythematous
9. Sjogren's syndrome
10. Polymyositis
11. Vasculitis syndrome
12. Polyarticular gout
13. Calcium pyrophosphate disease
14. Osteoarthritis.

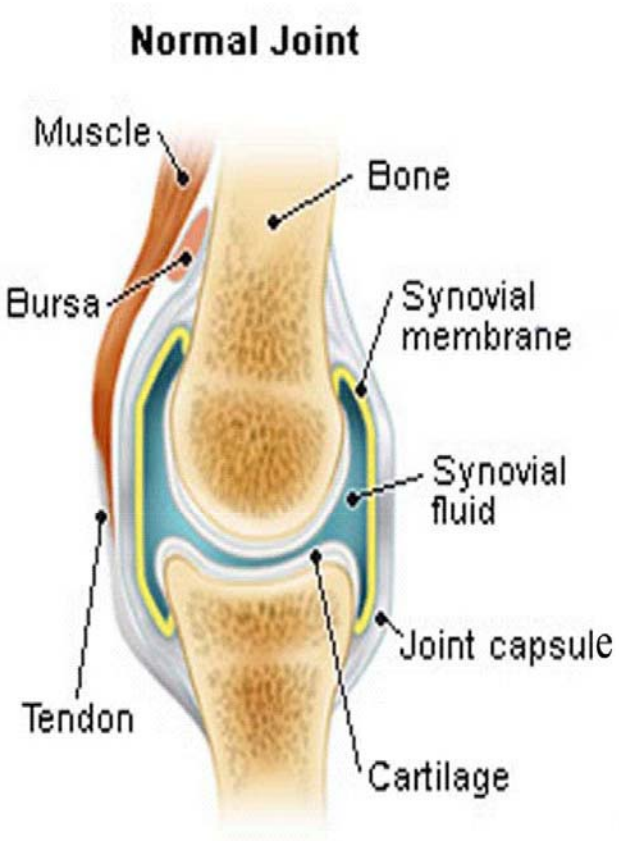

Origin of disease (Uthira Vatha Suronitham)
Dietary Changes
Seasonal Changes
Stress like factors
Genetic Changes
Immunological Changes
Socio economical factor
Immoral Activities
Reflected on
Soul – Mind – Body
Anatomical Pathology
Patho physiology
Patho psychology
Affected seven
Udal Thathukkal
affected three humors
affected Trigunam
Saaram
Senneer
Oon
Kozhuppu
Enbu
Moolai
Sukkilam / Suronitham
Vatham
Pitham
Kabham
Sathuva gunam
Rajo gunam
Thamo gunam
Disease
(Diagnosed by Envagai Thervugal)

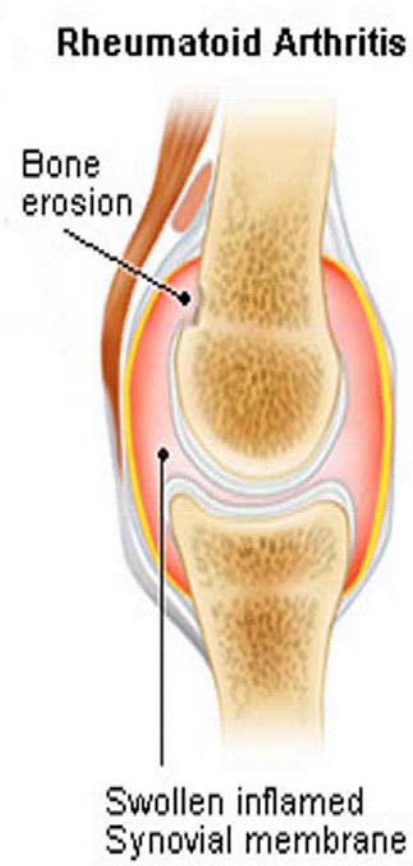

Affected Three humors
Vatham
➢Joint pain
➢Joint Swelling
➢Joint stiffness
➢Restriction of movements
➢ Constipation.
Pitham
1.Inflammatory
Changes in joints
(Redness, Warmth)
2.Loss of appetite
3. Anemia.
Kabham
➢Erosion of bony margin
➢Restriction of movements
➢Changes in synovial fluid
Abaanan → Constipation.
Viyaanan → Restriction of Movements.
Samaanan → Vitiation of Other Vayus and Loss of appetite.
Kirukaran → Loss of appetite.
Devathathan → Sleeplessness.
Anal Pitham → Loss of appetite
Ranjaga Pitham → Anaemia
Prasaga Pitham → Pallor of skin
Saathaga Pitham → Difficulty in Doing day to day activities
Avalambagam → Derangement of other kabha types
Kilethagam → Loss of appetite
Santhigam → Joint swelling Restriction of movements.


Affected Ezhu Udal Thathukkal
Saaram
Senneer
Oon
Kozhuppu
Enbu
Loss of appetite
Decrease in Udal Vanmai
(Anaemia, increased ESR,
positive RA factor)
Muscle wasting
Joint swelling
Restriction of Movement
Joint swelling
Bony erosion
Deformity
Diagnosis (Envagai Thervugal)
Naa
Niram
Mozhi
Vizhi
Malam
Moothiram
Naadi
Sparisam
Coated tongue
Pallor of tongue
Normal
Constipation
Vatha Pitham
Pitha Vatham
Pallor of skin (Anaemia)
Redness over the affected joints
1.Pallor of Conjunctiva
2. Disturbance in vision
1. Neerkuri - Normal
2. Neikuri - Snake like
Ring like, Pearl like
(Affected Joints)
1.Swollen
2. Tender and Warmth.

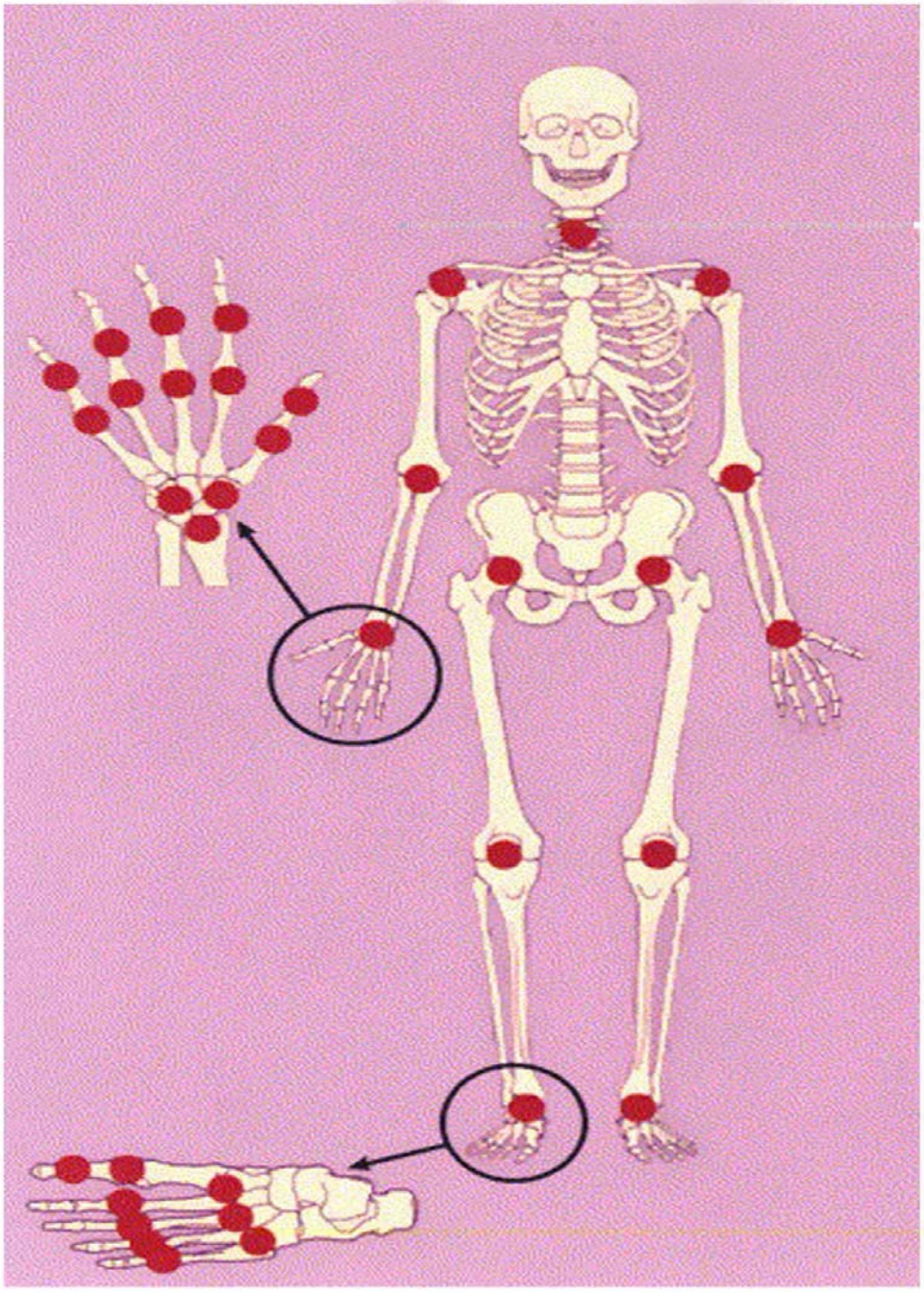
STAGES OF PATHOGENESIS PROCESS




Normal Joint
Muscle
Bone
Bursa
Synovial membrane
Synovial fluid
Joint capsule
Tendon
Cartilage


Rheumatoid Arthritis
Bone erosion
Swollen inflamed Synovial membrane

RHEUMATOID ARTHRITIS
(JOINTS INVOLVED)



AUTO ANTIBODIES IN RHEUMATOID ARTHRITIS:

Auto antibodies	**Target**	**Possible pathogenic role**	**% positive**
Rheumatoid factor	Self IgG	Generation of immune complex	70
Anti nuclear antibodies	Various nuclear components	Reaction with dead cells	4 - 6
Antihistones	Histones-I-IV	Vasculitis and uveitis	10 - 30
Anti ribinuclear protein	Ribonuclear proteins	Polyclonal b-cell activation	30
Antikeratin	Keratin	Disease severity	95
Anti cardiocipin	Diphosphate dyl glycerol	Effect on PGI2 release, platelet aggragation	10
Anti collagen	Type II collagen	Complement fixation joint	25
Antigliadin	Intestinal mucosa	Intestinal permeability to bacterial antigen triggers	25

PINIYARI MURAIMAI

Piniyari muraimai is a method of diagnosing a disease.

"Pini" means	=	Disease
"Ari" means	=	Identify
"Muraimiai" means	=	Method

This is based upon three main principles and Envagai Thervugal. The three main principles are,

- Poriyal arithal (Inspection)
- Pulanal arithal (Palpation)
- Vinathal (Interrogation)

Physicians 'Pori' and 'Pulan' are used as tools for examing the 'Pori Pulan' of the patient. The above principles correspond to the methodology of

- Inspection
- Palpation and
- Interrogation in modern medicine, in arrives a clinical diagnosis of the disease.

1. Poriyal arithal (Inspection)

Pori is considered as the five senses of perception namely,

1. Nose
2. Tongue
3. Eye
4. Skin
5. Ear

2. Pulanal arithal (Palpation)

Pulan are functions of five senses. They are,

1. Smell
2. Taste
3. Vision
4. Sensation of Touch

5. Hearing.

Examinations of Pori and pulan of the patient by Pori and pulan of the physician.

3. Vinathal (Interrogation)

Vinathal is asking the information regarding the history of the disease, its clinical feature etc., from the patient or his close relatives who are taking care of him.

அளவைகள் : (Logics):

Alavaigal are used in clinical diagnose of a disease.

"அளவை காண்டல் கருதல் உரை அபாவம் பொருள் ஒப்பாறென்பர்
அளவை மேலும் ஒழிபுண்மை யைதிகத் தோடியல் பென நான்
களவை காண்பர் அவையிற்றின் மேலும் அறைவர் அவையெல்லாம்
அளவை காண்டல் கருதல் உரை என்னும் மூன்றிலடங்கிடுமே"

- சிவசித்தியார் அளவை எண். 6

Alavai is divided into ten types, they are,

1. Observation – காண்டல்
2. Inference – கருதல்
3. Authority, literature – உரை
4. Preception – அபாவம்
5. Presumption – அருத்தப்பத்தி
6. Comparison – உபமானம்
7. Inference by elimination – பாரிசேஷம்
8. Probability – சம்பவம்
9. Tradition – ஐதீகம்
10. Natural Inference – இயல்பு

The above mentioned "ten alavaigal" are included in three alavaigal. They are,

1. Kaandal (Inspection by Siddha method):

Through 'Kaandal' the physician can directly see the patient, hear the patients all the complaints and at length concludes a diagnosis.

2. Karuthal (**Through Siddha Investigations**)

Through Envagai thervu and Neerkuri as well as Neikuri, we can diagnose a disease by Karuthal.

3. Urai (Literature evidence of Siddha)

Comparative study of the signs and symptoms of the patient with the reference books and come to a diagnosis.

Ennvagai thervuagal (Eight diagnostic tools)

Siddhars have developed a unique method of diagnosing the disease by "Ennvagai thervugal".

"நாடி ஸ்பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திரமிவை மருத்துவ ராயுதம்"

- சித்த மருத்துவ நோய்நாடல் நோய்முதல் நாடல் திரட்டு.

Hence the diagnosis is made by the following,

1. Naadi (Pulse)
2. Sparisam (Sensation to touch)
3. Naa (Tongue)
4. Niram (Colour)
5. Mozhi (Voice)
6. Vizhi (Eyes)
7. Malam (Faeces)
8. Moothiram (Urine)

The specialty of eight tools of diagnosis is mentioned in the following verses also,

'தொடுக்கலுற்ற அட்டவிதப் பரிட்சை தன்னை
துலக்கமுறும் பண்டிதரே தெளி வதாகப்
பகுக்கரிய நாடியே நீ பிடித்துப் பாரு
பகர்கின்ற வார்த்தை பார் நாவைப் பாரு

வகுக்கரிய தேகமெனத் தொட்டுப் பாரு
சகிக்கரிய மலத்தைப் பார் சலத்தைப் பாரு
சார்ந்த விழிதனைப் பார்த்து தெளிவாயக் காணே.''

- அகத்தியர் வைத்திய வல்லாதி 600.

1. Naadi (Pulse):

The science of pulse forms a very important branch in the siddha system of medicine. Naadi is the seat anchor of energy. It is the binding force between soul and body. The pulse-waves as felt on the radial artery, one inch from the wrist by means of palpation with the tip of index, middle and ring finger corresponds to Vatham, Pitham and Kabham. They exist in the ratio of 1:1/2:1/4 normally. Derangement of this ratio leads to various disease entities.

In Udhiravatha Suronitham, Vatha pitha naadi, Pitha vatha naadi and Vatha kaba naadi are commonly seen.

2. Sparisam (Skin):

Skin examination can be made by inspection and palpation (touch). It reveals about the warmth/chillness, dry/weeping skin, rough/smooth, soft/hard, tenderness, presence of ulcers, fissures, swelling, wrinkles etc.

In Udhiravatha Suronitham, the affected part feels warm with redness, swelling, tenderness and subcutaneous nodules can be noticed.

3. Naa (Tongue examination):

The colour, character and condition of tongue change according to changes in mukkutram.

In Udhiravatha Suronitham, few cases had coated tongue. In few cases that were anaemic, the tongue was pale and some were have glossy.

4. Niram (Colour):

Signs of different complexions in Vatham, Pitham, Kabham and Thontha thegis, cyanosis, pallor, yellowish discolouration can be studied by means of niram.

In Udhiravatha Suronitham, the patient is of mixed complexion and the affected parts get swollen with hyperaemia.

5. Mozhi (Speech):

It constitutes high, low pitched voice, slurring and incoherent speech, nasal speech, hoarseness of voice etc.

In Udhiravatha Suronitham, the speech is normal in most of the patients. Only two patients had horseness of voice.

6. Vizhi (Eye):

Both motor and sensory disturbance of eye are noticed. Burning sensation, redness of eyes, paleness, excessive lacrimation, swelling, sunken eyes, corneal ulcers, other diseased conditions should be noted.

In Udhiravatha Suronitham, if the patient is anaemic, pallor of conjunctiva will be seen.

7. Malam (Stools):

Vatha type	:	Black coloured stools with constipation.
Pitha type	:	Loose stools with yellowish red colour.
Kabha type	:	White coloured stools with mucus.
Thontha type	:	Stools possess some of the features of two thodams.

In Udhira Vatha Suronitham, constipation is noted in few patients

8. Moothiram (Urine):

It includes Neerkuri and Neikuri.

Neerkuri:

- Niram - Indicates the colour of urine voided.
- Manan - Indicates the smell of urine voided.
- Edai - Indicates the specific gravity of urine voided.
- Nurai - Indicates the frothy nature of urine voided.
- Enjal - Indicates the quantity of urine voided.

In addition, the frequency of micturation and sedimentations are noted.

In Udhiravatha Suronitham, no abnormalities are seen in the above features.

Neikuri:

‘அருந்து மாறிரதமும் அவிரோதமதாய்
அ.ஃகல் அலர்தல் அகாலஊண் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக் கலசத் தாவியே காது பெய்
தொரு முகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே.

- தேரையர்.

Prior to the day of urine examination, the patient was advised to take a balanced diet and the quantity of food must be proportionate to his appetite and he should have a good sleep.

After waking up in the morning, urine that is voided first is collected in a glass container and is subjected to analysis within one hour.

A drop of gingelly oil is added without disturbance and neikkuri is noted in direct sunlight.

Character of Vatha Neer:

‘அரவென நீண்டின.ஃதே வாதம்.”

When the drop of oil lengthens like a snake, it indicates ‘Vatha Neer’.

Character of Pitha neer:

"ஆழிபோல் பரவின் அ.ஃதே பித்தம்."

When the oil drop spreads like a ring, it indicates ‘Pitha Neer’.

Character of Kabha Neer:

‘முத்தொத்து நிற்கின் மொழிவதென் கபமே.”

When the oil drop remains that of pearl, it indicates ‘Kabha Neer’.

Character of Thontha Neer:

Thontha neer appears as the combination of above patterns.

‘அரவிலாழியும் ஆழியில் அரவும்
அரவின்முத்தும் ஆழியில் முத்தும்
தொற்றில் தொந்த தோடங்களாமே.”

In Uthiravatha suronitham most of the patients had vatha neer and some of had kabha neer.

Besides Envagai thervugal, a disease can also be diagnosed by means other methods namely thinaigal, paruvakalangal, Udal thathukkal, Uyir thathukkal and Pori pulangal. A combination of all these diagnostic criteria is helpful to attain a proper diagnosis with complete entity based principles of siddha science.

Thinai (Land and Place):

The geographical distribution of land is classified into the five groups.

1. Kurinji - Mountain and its surroundings
2. Mullai - Forest and its adjacent areas
3. Marutham - Field and its surroundings
4. Neithal - Sea and its surroundings
5. Paalai - Desert and its surroundings.

Each region has its own characters, which influences the inhabitants, physical, mental, economical and occupational activities. In each region, some ailments are endemic based on the climatic features of that area.

In ‘Udhiravatha Suronitham’ most of the patients comes from Neithal nilam. Modification in lifestyle and food habits can also brings about the disease.

Paruvakaalam (Seasonal Variations)

The seasonal variation mainly depends upon the temperature, humidity, air and other climatic factors.The whole year is constituted by six seasons. They are,

S.No	Kaalam	Kuttram	State of Kuttram	Suvai
1.	Kaar Kaalam	Vatham ↑↑	Vettrunilai Valarchi.	Enippu

	(Aavani-Puratasi) (Aug16 – Oct 15)	Pitham ↑	Thannilai Valarchi	Pulippu Uppu.
2.	Koothir Kaalam Iypasi – Karthigai (Oct16 – Dec15)	Vatham (−) Pitham ↑↑	Thannilai Adaithal Vettrunilai Valarchi.	Enippu Kaippu Thuvarppu
3.	Munpani Kaalam (Markazhi – Thai) (Dec16 – Feb15)	Pitham (−)	Thannilai Adaithal	Enippu Pulippu Uppu
4.	Pinpani Kaalam (Masi – Panguni) (Feb16 – Apr15)	Kabam ↑	Thannilai Valarchi.	Enippu Pulippu Thuvarppu
5.	Elavenil Kaalam (Chithirai – Vaikasi) (Apr16 – Jun15)	Kabam ↑↑	Vettrunilai Valarchi.	Kaippu Karppu Thuvarppu
6.	Mudhuvenil Kaalam (Aaani – Aadi) (Jun16 – Aug15)	Vatham ↑ Kabam (−)	Thannilai Valarchi Thannilai Adaithal	Enippu

According to climatic condition that prevails in every season, changes will occur in the human beings which will modify the physiological state and makes them susceptible to certain specific disease likely to occur in that season.

Thus Vatham gets provoked from its normal state in its own location during “Muthuvaenir Kaalam”. This altered vatham spreads to other location in “Kaar Kaalam”. Altered Vatham subsides in “Koothir Kaalam”. The above three conditions are named as Thannilai Valarchi, Vetrunilai Valarchi and Thannilai Adaithal.

The incidence of Uthiravatha suronitham more in Kaarkalam and Koothir kaalam.

MUKKUTRA VERUPADUGAL (SIDDHA PATHOLOGY)

'பிணியினுற் பத்தியை பேசுவன் பிணிமுதல்
வாதபித் தங்கப மன் மந்திரி தந்திரி
வீதமா யுடலரண் மெய்ம்புர வரசு செய்
முறை செயுமாதலான்."

- தேரையர் காப்பியம்.

(வாதம் - அரசன், பித்தம் - மந்திரி, கபம் - சேனாதிபதி)

Which highlights that the main factor in the causation of the disease are vatham, pitham and kabham.

VATHAM:

Vatham is the prime force that impacts movement to every living cell in the body. Its dwelling place lies in the bones, muscles, nerves, joints etc. Hence it is responsible for the movement of parts involved in locomotor system. When vatham is affected, the other two pitham and kabham also gets deranged and in turn, they vitiates the other structural and functional elements of the living body called seven Udal thathus.

- **Viyaanan** which is responsible for the voluntary and involuntary movements and nutrition of the tissue gets affected leading to restriction of movements and lassitude.

- **Samaanan** which neutralizes other vitiated vayus gets affected. Further it is needed for normal digestion. So derangement of this vayu produces loss of appetite and indigestion.

- Involvement of Abaana Vayu also plays a main role in the manifestation of signs and symptoms. **Abaanan** which is responsible for distribution and assimilation of nutritional factors gets affected leading to symptoms like constipation.

- **Kirukaran** and **Thevathathan** are also affected because of loss of appetite and sleeplessness respectively.

PITHAM:

The main function of pitham which represents agni is thermogenesis or heat production, metabolism within its limits, process of digestion etc. Its vitiation produces inflammatory changes in joints. Among the five types of Pitham, the following four types get affected in Udhiravatha Suronitham.

- **Ranjaga pitham** which gives colour to blood.
- **Saathaga pitham** which is needed to carry out normal activities.
- In few, **Anal pitham** which is needed for digestion gets affected leading to anorexia.
- **Prasaga pitham** which gives complexion to skin gets affected leading to pallor of skin.

KABAM:

The detoriation of the two main kuttram accompany the Kabha kutram whose structure is Earth + Water and is concerned with the maintenance of smooth working of joints, integration of structural elements of the body into stable structures etc.

- **Santhiga kabham** which is needed for normal maintenance of synovial fluid gets affected.
- **Avalambagam** which forms the basis for all the other four types of Kabham gets affected.
- In few, **Kilethagam** gets affected leading to loss of appetite.

Thus disturbance in Mukkutram produces,

- Pain, swelling of joints, joint stiffness, restriction of movements, loss of appetite and sleeplessness and constipation due to vatham.
- Inflammatory changes in joints like redness, warmth, loss of appetite and anemia due to pitham.
- Erosion of bony margin, osteoporotic changes, increases in the synovial fluid are due to disturbed kabham.

UDALTHATHUKKAL:

Disturbances in vatham, pitham and kabham gets reflected on Udal thathus leading to change in normalcy of body or predisposition to causing disease. The seven udal thathus that supports the body in their state of equilibrium are as follows.

1. Saaram	-	Strengthens the body and mind.
2. Senneer	-	Gives power, knowledge and boldness to the mankind.
3. Oon	-	It gives structure and shape to the body and is responsible for movements of the body.
4. Kozhuppu	-	It lubricates the joints and organs and facilitates their functions.
5. Enbu	-	It protects all the internal organs and forms structural framework of the body.
6. Moolai	-	Resides inside the core of bones. It strengthens and maintains the normal condition of bones.
7. Sukkilam/ Suronitham	-	Meant for reproduction (Male and Female respectively).

In Uthiravatha suronitham, the affected Udal thathus are,

- Saaram - Loss of appetite, lassitude.
- Senneer - Anaemia, presence of RA factor).
- Oon - Muscle wasting, swelling.
- Kozhuppu - Emaciation, restriction of joint movements.
- Enbu - Vague pain and swelling of joints and deformity of joints.

LINE OF TREATMENT:

Siddha treatment is not only for complete healing but also prevention and rejuvenation. Saint ***Thiruvalluvar*** says about physician duty, study the disease, study the cause, treat subsiding way and do what is proper and effect.

"நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்.
"உற்றான ளவும் பணியளவுங் காலமுங்
கற்றான் கருதிச் செயல்."

- திருக்குறள்.

So it is essential to know the disease, the etiology, the nature of patients, severity of the illness, the seasons and the time of occurrence must be observed clearly.
Line of treatment is as follows.

- Kaappu (Prevention)
- Neekkam (Treatment)
- Niraivu (Restoration).

1. KAAPPU (Prevention):

"The curse causeless shall not come" is a proverb. Knowing the cause there by removing it and thus preventing the disease is the main aim of siddha system of medicine.
Thiruvalluvar depicted,

**'மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உண்ணின்."**

This Kural highlights that no medicine is required by the body if food is taken on complete digestion on what was taken before. Thus change in food habits plays a main role in the causation of diseases

Further, following of ***Theraiyar Pini Anugaa Vidhi*** will help in the prevention of diseases. The main highlights of Theraiyar Pini Anugaa Vidhi are as follows.

“திண்ண மிரண்டுள்ளே சிக்க வடக்காமற்
பெண்ணின்பா லொன்றைப் பெருக்காமல் உண்ணுங்கால்
நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி யுண்பவர்தம்
பேருரைக்கிற் போமே பிணி.

பாலுண்போம் எண்ணெய்பெறின் வெந்நீரிற் குளிப்போம்
பகற்புணரோம் பகற்றுயிலோம் பயோதரமுமூத்த
ஏலஞ்சேர் குழலியரோ டிளவெயிலும் விரும்போம்
இரண்டடக்கோம் ஒன்றைவிடோம் இடது கையிற் படுப்போம்
மூலஞ்சேர் கூறிநுகரோம் மூத்தயிர் உண்போம்
முதனாலிற் சமைத்தகறி யமுதெணினு மருந்தோம்
ஞாலந்தான் வந்திடினும் பசித்தொழிய வுண்ணோம்...
மண்பரவு கிழங்குகளிற் கருணையன்றி புசியோம்
வாழையிளம் பிஞ்சொழிய கனியருந்தல் செய்யோம்
நண்பு பெற வுண்டபின்பு குறு நடையுங் கொள்வோம்.”..

2. NEEKKAM (Treatment):

In siddha system the main aim of Pini Neekam is based on the following objectives.

- Accurate diagnosis is essential for the early application of appropriate forms of therapy.
- To bring the three thodams to equilibrium.
- Treatment of the disease and its symptoms by internal medicines, topical application of medicated oil (Thokkanam), fomentation (Otradam) in affected region.
- To built up seven body constituents
- Diet and prevention of disease.
- To increase natural immunity.
- Education of patient in maintaining the joint stability by means of Yogasanas.

‘விரேசனத்தால் வாதம் தாழும்
வமனத்தால் பித்தம் தாழும்
நசிய அஞ்சனத்தால் கபம் தாழும்.”

Vatha diseases can be brought down by ‘Viraesanam’. For this laxatives and purgatives are given according to patient’s tolerance to drug. All the patients were given Merugulli thylam at a dose

of 10ml with warm water on the first day in the early morning. They were put in diet allowing only taking butter milk.

‘வேர்பாரு தழைபாரு மிஞ்சினக்கால்
மெல்ல மெல்லப் பற்பச் செந்தூரம் பாரே.’’

The disease Uthiravatha suronitham involving multiple system of the body especially musculoskeletal system affected first and then other systems are affected depends upon their immunology. Single and herbal drug therapies are not much useful to cure the disease. Herbomineral drug only can give remarkable improvement in this disease.

3. NIRAIVU: (RESTORATION)

Reassurance of disease recovery was given to all patients. All the patients were advised to live in good health free from disease.

Diet:

‘‘மருந்தே உணவு உணவே மருந்து’’

- திருமூலர்

‘‘மாறுபாடி ல்லாத உண்டி மறுத்துண்ணின்
ஊறுபா டில்லை உயிர்க்கு’’

- திருக்குறள்

என்பதினால் உண்ணும் உணவுப் பொருளிலும் கவனம் செலுத்த வேண்டும். குளிர்ந்த பொருட்களைத் தவிர்க்க வேண்டும். குளிர்ந்த காற்று குளிர்பனியில் உலாவுவதை தவிர்க்க வேண்டும்.

Anupaanam:

In siddha system of medicine the adjuvant is one of the most important thing during therapy.

“அனுபானத்தாலே யவிழ்தம் பலிக்கும்
இனிதான சுக்கு கன்னல் இஞ்சி - மினு முதகால்
கோமயம் பால் முலைப்பால் கோநெய் தேன் வெற்றிலை நீர்
ஆமிதையாராய்ந்து செய்யலாம்”

- தேரன் வெண்பா.

Pathiyam:

"Take anything you like" – siddha system does not believe in this dictim. The system of arranging dietary with certain restrictions in diet and physical activities is Pathiyam. Pathiyam for vatha disease as mentioned as Patharthaguna chinthamani is as follows,

தோடைத் தேன்மிளகு நல்லெண்ணெய்
தங்கு பெருங் காயம் தழுதாழை எங்கெங்கும்
கூட்டுசிறு முத்து நெற் கோதில் உளுந்திவைகள்
வாட்டு மனிலத்தை மதி"

சேர்க்கத்தக்கன:

செங்கழுநீர் கிழங்கு, தேன், மிளகு, கோட்டம், எள்நெய், நெய், உளுந்து, பெருங்காயம், தழுதாழை.

நீக்க வேண்டியவை:

உப்பு, புளிப்பு, துவர்ப்பு, சுவையுள்ள பொருள்கள்.

MANAGEMENT OF UTHIRAVATHA SURONITHAM:

THOKKANAM, OTRADAM:

Thokkanam is topical application of medicated oil. It is the systematic and scientific manipulation of body tissues, best performed by hands. Ottradam is fomentation and is done with the use of herbs etc.

Both of which produces pain relief and increases the blood flow owing to arteriolar and capillary dilatation and **reduces joint stiffness**. **They increase the extensibility of collagen tissues so that contractures can be stretched.**

YOGA:

Yogasanas are specialized postures of the body and **helps in the development of an inner awareness and results in deep relaxing and energy conservation.** Prescription of these asanas which is synchronized with breathing helps in the correction of impairment there by improving the musculo-skeletal function and maintaining the state of well being.

Udhiravatha Suronitham patients were advised to perform,

1. Savasanam, two times daily for a session of 10 minutes.

Sava means dead body. Should lie motionless on the floor in supine Posture like dead body with a view to secure complete relaxation of all parts of the body and removing stress.

2. Deep relaxation techniques once daily for a period of 20 minutes.

Further the patients were adviced to do Pranayamam in association with Mudras.

- Naadi Sudhi (Using Nasika Mudra)
- Abdominal Breathing (Using Cin Mudra)
- Thoracic Breathing (Using Cinmaya Mudra)
- Full Yogic Breathing (Using Brahma Mudra)

Practice of this pranayama relieves stress, tension, anxiety and insomnia there by bringing stability to mind. **The Mudras preserves the joint movements of fingers.**

3. NIRAIVU (Life style modification):

Self help techniques were advised to keep inflammatory process at a minimum, there by preserving joint motion.

Self management techniques:

- Rest - reduces the general activities there by avoiding straining of joints and to conserve the quota of vitality.
- Positive mental attitude.
- Use of joint – Patient is told, the value of correct posture and methods of using the joints wisely to reduce stress on the painful joints.
- An assistive device – Like splints, walking sticks provides strength and reduces pain and inflammation.
- Adequate sleep.
- Relaxation techniques.

- Modification in daily activities like avoiding walking on hard and uneven surfaces, avoiding squatting on ground, etc.

PHYSICAL THERAPY:

Physiotherapy is the application of physical agents and principles to pathological conditions for the purpose of producing therapeutic effects.

Physiotherapy includes:

- Active exercise
- Passive joint movement
- Local heat
- Massage
- Electrical stimulation of muscle
- Light therapy – UV rays therapy and infra red ray's therapy.

DETAILS OF RANGE OF MOTION EXERCISE:

I. UPPER EXTREMITIES:

A. Neck:

1. In sitting position twist your head as possible in each direction.
2. Sit or stand with your hands on the hips. First circle the head clockwise then counter clockwise.
3. In the sitting position try to touch shoulder with your head.
4. In the sitting position look behind as for as possible and then look at your toes.

B.Shoulder:

1. Arms at side with elbow straight bring arms forward and upward by ear.
2. Arms at side with elbow straight take arms sideward and upward.
3. Arms at side bend elbow to right angle and take hands apart.

C.Elbow:

1. Bend elbow, touching fingers to top of shoulder.
2. Straighten elbow.

D.Forearm:

Elbow bend, turn palm of the hand and then back of the hand towards face.

E.Wrist:

1. Keeping forearm steady, move the wrist up and down as in waving.
2. Again hold forearm steady, move the wrist up and down as in hand shaking.
3. Make circle with hand.

F.Hand and Fingers:

1. Make tight first.
2. Open fingers as wide as possible.
3. With the hand open spread fingers away from each other and then together.
4. Touch tip of the thumb to the tip of the each fingers.
5. Bend the thumb in toward palms of the hand.

II.LOWER EXTREMITIES:

A. Knee:

Sit with your feet off the floor. Lift the leg and then allow it to return to the bent position slowly.

B. Ankle:

1. Pull foot up and in, and then push back downward.
2. Make circle with foot.
3. Pull foot in toward other foot.
4. Pull foot to outside.

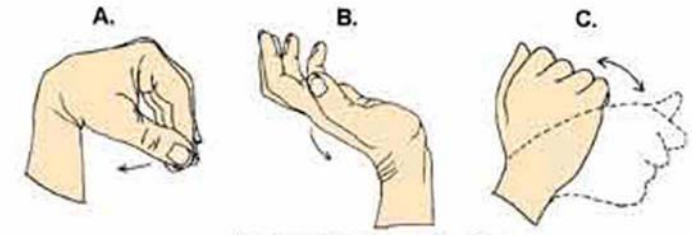
C. Toes:

Pull up on toes then curl toes under.

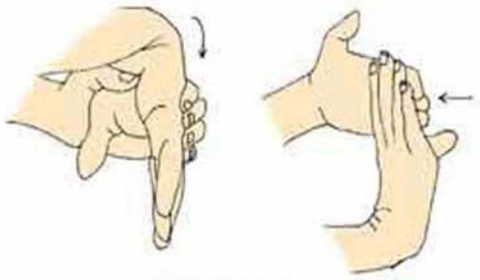
Exercise benefits for individuals with arthritis:

- Helps to preserve muscle strength and normal mobility of joints.
- Relieves of pain and stiffness.
- Prevent further deformities.
- Improves co-ordination.
- Return to normal independent life style.

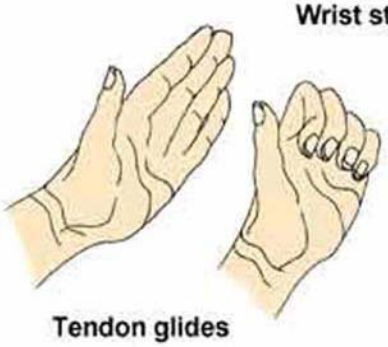
HAND EXCERCISES



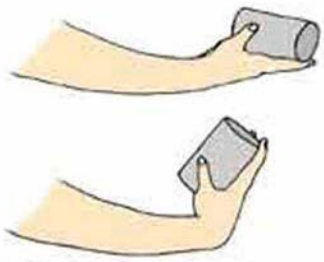
Active range of motion



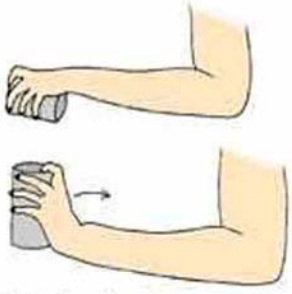
Wrist stretch



Tendon glides



Wrist flexion exercise



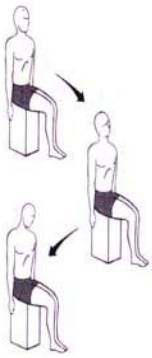
Wrist extension exercise

Grip strengthening

EXCERCISES

CERVICAL COLUMN

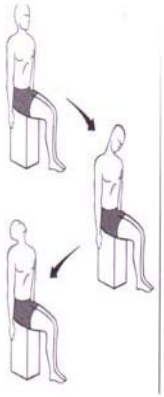
1



Method

- *Sitting straight up, bend the head first to the left and then towards the right, keeping the gaze fixed straight ahead during the exercise.*

2

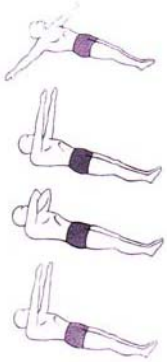


Method

- *Bend the head and let it fall forwards till the chin touches the chest, and then slowly bend the head back as far as it goes.*

ELBOW JOINT

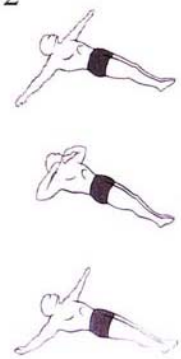
1



Method

- *Raise arms vertically, then slowly cross them so that the right hand touches the left shoulder and the left hand touches the right shoulder.*
- *Bring arms back to a vertical position and revert to starting position.*

2



Method

- *While inhaling, press the elbows against the floor, then relax the arms by releasing the pressure while exhaling.*

SHOULDER JOINT

Starting position
Sitting upon a stool, with hands joined across the chest.

Method

- *Turn joined hands away from the body, with the back of the hands facing the chest; extend the arms forwards and then revert to starting position by performing the same movements in an inverse direction.*

EXERCISES FOR WRIST AND FINGERS

1

Method

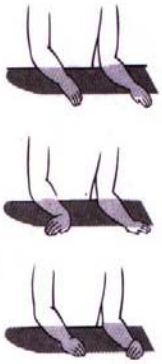
- *Raise the hands without moving forearms.*

2

Method

- *Sitting at the table with the hand over the edge. Bend and extend the hand from the wrist.*
- *Continue the same exercise by holding a maximum weight of 2 kg in each hand.*

3



Method

- *Move the hands along the table from side to side from the wrist, without moving the forearms.*
- *Carry out the same exercise, raising hands from the table, wrist upwards, making a semi-circular movement.*

4

Method

- *Rotate the forearm, making the palm face upwards, and then repeat the movement in the inverse direction, palm facing the floor,*
- *Continue the same exercise alternately with a weight in each hand, preferably holding an empty bottle.*

5

Method

- *Rotate the hand in a circular motion in both directions.*
- *Continue the exercise alternately by holding in each hand a weight not exceeding 2 kg.*

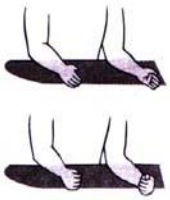
6

Method

- *Spread the fingers and thumbs, separating each one.*

EXERCISES FOR WRIST AND FINGERS

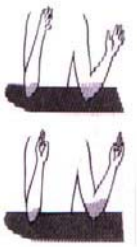
7



Method

- *Bend the arms at the elbows, bringing forearms up, open and close fists; revert to starting position.*

8



Method

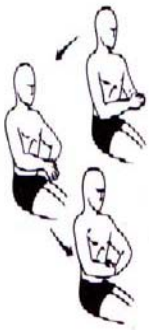
- *Bring the tips of the each thumb and index finger together; repeat with each one of the fingers, extending the fingers between each movement.*

9

Method

- *Rotate the forearms so that the fingers face the chest; slowly stretch the arms forwards at shoulder level, keeping the palms together; revert to starting position by making the same movements in the inverse direction.*

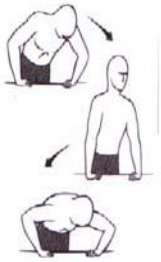
10



Method

- *Without separating the palms, direct the fingers first towards the floor and then towards the chest.*

11



Method

- *Bend downwards, letting the chest touch the table, straighten the arms and then repeat the movement again.*

12

Practical Exercises

- *Open and close a water-tap or a window, turn a key into a keyhole, button and unbutton a garment, knot a lasso, operate a switch, open and close a door, screw and unscrew a cover, pick up match sticks or needles and do writing exercises.*

MATERIALS

AND

METHODS

MATERIALS AND METHODS

ABOUT THE DISEASE:

a) According to siddha aspect:

In siddha literature the clinical features of Uthiravatha suronitham according to yugi Vaithya chinthamani is given below,

¨Å¸¢¾Á¡ö ¸¨½¸¡Ö ÓÆí¸¡ø ¾¡Ûõ
ÁÜ¸¼ï °óÐ ÒÈ ÅÊÔõ Å£í¸¢î
¦°ö¸¢¾Á¡ö °¢ÚÅ¢Ãø¸û Á¢¸×õ ¦¿¡óÐ
°¢ó¨¾ ¾ÎÁ¡È¢¦Â °Ä¢ôÒñ¼¡Ìõ
¨À¸¢¾Á¡õ ÀÂ¢ò¾¢Âò ¾¢øÄ¡¾ Á¢ï°¢ô
À¡ÃÁ¡ö ¯üÀÅ¢òÐ «ÆÖñ¼¡Ìõ
¯ö¸¢¾Á¡õ «°ÉÁÐ ¾¡Ûõ §ÅÑ¼¡
¯¾¢ÃÅ¡¾ Í§Ã¡É¢¾ò¾¢ Û½÷î°¢Â¡§Á

– ä¸¢°¢ó¾¡Á½¢.

B) In Modern medicine, clinical features of Rheumatoid arthritis are:

1. Arthritis of three or more joints including major joints and minor joints.
2. Arthritis of hand joints – Interphalangeal jts of both hands and feets.
3. Morning stiffness > 1 hr.
4. Symmetrical arthritis.
5. Fever.
6. Anemia.
7. Anorexia.
8. Spindled appearance of fingers.
9. Rheumatoid nodules.
10. Broadening of the forefoot.

IV SAMPLE:

Patients of Uthiravatha suronitham reporting at OPD – Ayothidoss Pandithar Hospital in National institute of siddha, Tambaram sanatorium, Chennai-47.

SAMPLE SIZE:

The trial size will be 40 patients. (20 In patients and 20 Out patients)

STUDY DESIGN:

Clinical trial of cases of Uthiravatha suronitham (Rheumatoid arthritis) by Rasapralaya chenthuram (Internal) and Navanatha siddhar thylam (External application) for a period of 20 days.

V INCLUSION CRITERIA:

- Age between 25 to 55 years.
- Sex: Both Male and Female.
- Arthritis of three or more joints.
- Symmetrical joint involvement.
- Morning stiffness.
- Positive serum rheumatoid factor.
- Anemia
- Fever
- Anorexia
- Spindled shaped appearance of fingers.
- Rheumatoid nodules.

VI EXCLUSION CRITERIA:

- Cardiac disease.
- Hypertension
- Diabetes mellitus.
- Use of narcotic drugs.
- Pregnancy and lactation.
- Other joint disease.
- History of trauma.

- Neurological disorder.

VII TERMINATION CRITERIA:

- Development of any adverse drug reaction.
- Occurrence of any serious illness.

VIII TRIAL DRUG AND DURATION:

1. Purgation - Merugulli thylam - 10 ml in the morning with hot water (first day of treatment only)
2. Internal medicine - Rasapralaya chenthuram 100 mg with Thirikadugu choornam 1 gm with the adjuvant of honey, twice a day after food.
3. External medicine - Navanatha siddhar thylam 10ml local application twice a day.
4. Trial period – 20 days for each patient.

IX STUDY PERIOD: 90 days.

RECRUITMENT:

As and when patients reporting in Ayothidoss Pandithar Hospital of National Institute of Siddha, satisfying inclusion and exclusion criteria will be eligible for admission to the trail. They will be included in the study with the approval of Head of the Department. Informed consent will be obtained from the patients before entering into the study.

IX TESTS AND ASSESSMENTS:

A. Clinical Assessment Proforma:

B. Routine investigations:

- **Blood** – TC, DC, ESR, Hb, Blood sugar, Serum cholesterol.
- **Kidney function test** - Urea, Creatinine.
- **Liver function tests –** Serum total Bilirubin, Direct Bilirubin, Indirect Bilirubin, Alkaline phosphates, SGOT, SGPT.

C. Specific investigations:

CRP, RA factor, ASO titre.

D. Urine:

Urine sugar, Albumin, Deposits.

E. Stool:

Ova, Cyst, Occult blood.

X ASSESSMENT BY SIDDHA ASPECTS:

Envagaithervugal and Mukkutra assessment.

SIDDHA ASPECTS (According to yugi vaithya chinthamani):

- Pain and swelling in major joints and minor joints.
- Pain in heels.
- Pain in Interphalangeal joints(hand joints)
- Fever.
- Burning sensation.
- Anorexia

X METHODOLOGY OF TREATMENT:

Rheumatoid arthritis patients satisfying inclusion and exclusion criteria will be eligible for the admission to the trial. Informed consent will be obtained from the patient. Lab test will be carried out before treatment.

A day before to starting the trial drug treatment, purgation will be given to correct the elevated mukkurams. The next day onwards the trail drug will be given to the in patients. For In patients, the trial drug will be given daily by the doctor. The clinical assessment will be made daily and laboratory investigations will be done on the first day and 21st day of the treatment.

For out patients, the trail drugs will be given in the Out patients Department of our Hospital. The patients will be asked to follow regular check up in the Op Department once in 7days regularly. In

each visit, the clinical assessment will be reported regularly by researchers prescribed proforma. The laboratory investigations will be done before and after treatment and recorded in the prescribed format.

XI DATA COLLECTION FORMS:

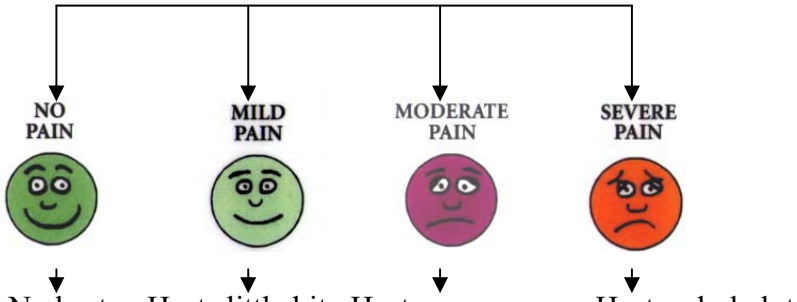
Required information will be collected each patients by using forms I, II.

- Form I - Selection proforma – Used at the time of admission of the patient to the study.
- Form II - Assessment proforma - Used after the study period.
- Form III – Daily progress chart – Used during the study period.

XII STATISTICAL ANALYSIS:

- R.A. Scale for measurement of pain.
- Mean of objective parameters – before and after treatment- paired t test.
- Multivariate analysis will also be performed if applicable.

UNIVERSAL PAIN ASSEMENTS SCALE:



- No pain - Patient can able to do day to day life.
- Mild pain - Patient can able to tolerate pain and also able to work.
- Moderate pain – Patient can able to work but pain more interference with concentration.
- Severe pain – Difficulty to do basis needs.

GRADATION OF RESTICTED MOVEMENTS:

- G I – Able to perform normal duties.
- G II – Moderate Restiction – Self care is possible.

- G III – Marked restriction – Limited self care. Some assistance required.
- G IV – Confirmed to bed or Wheel chair.

Mr. DEVA 32/M

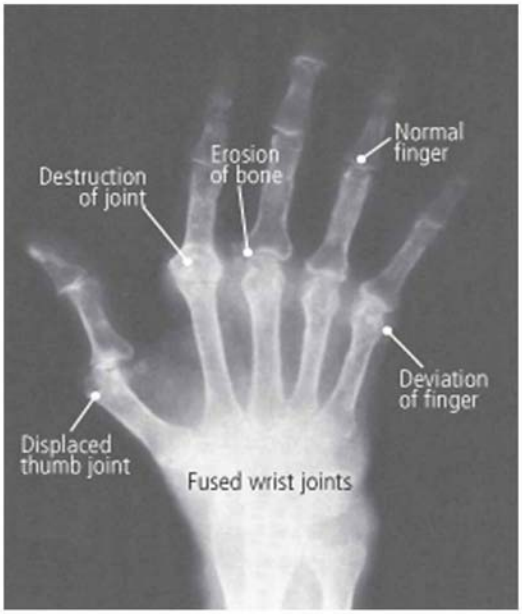
SWAN NECK DEFORMITY WITH ULNAR DEVIATION OF FINGERS

HALLUS VALGUS WITH CROWDING OF TOES

MRS. MUNIYAMMA 36/F

RHEUMATOID NODULES

X - RAY CHANGES



Mrs. Muniyamma 36 / F

BOUTONNIERE DEFORMITY, Z DEFORMITY OF RIGHT HAND

HALLUS VALGUS WITH HAMMER TOES & OVERLAPPING OF TOES

OBSERVATION AND RESULTS

OBSERVATION AND RESULTS

Results were observed with respect to the following criteria.

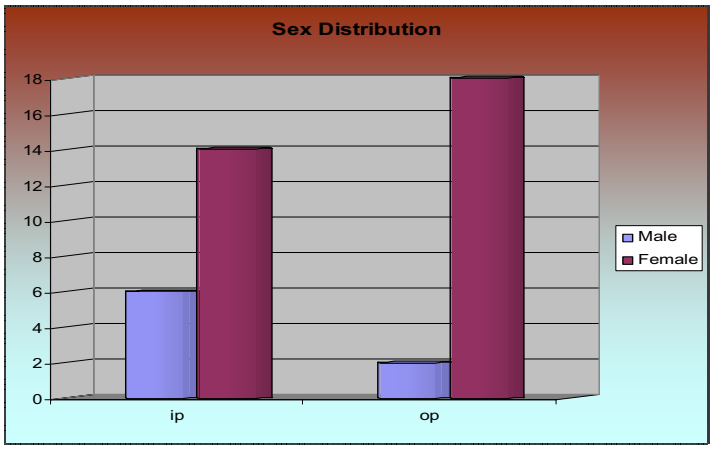
1. Sex distribution.
2. Age distribution.
3. Thinai.
4. Paruvakaalam.
5. Occupation.
6. Diet reference
7. Socio-economic status.
8. Etiological factor.
9. Mode of onset.
10. Duration of illness.
11. Clinical manifestations.
12. Systemic examination.
13. Individual joint involvement.
14. Joint deformity.
15. Grading of restricted movements.
16. Disturbance in mukkutrams.
17. Involvement of Udhal thathukal.
18. Envagaithervugal.
19. Results.

1. Sex Distribution:

Table – 1. Illustrates sex distribution and its relative percentage.

SI. No.	Sex	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Male	6	30 %	2	10 %
2	Female	14	70 %	18	90 %

From the above table, it is clear that the **incidence is more in females**.



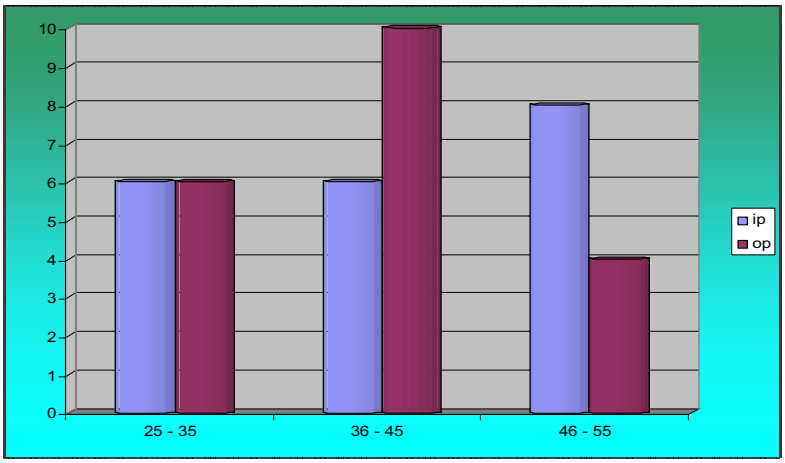
2. Age Distribution:

Table - 2 illustrates age distribution and its relative percentage:

S.NO	AGE	IN PATIENTS		OUT PATIENTS	
		No.ofcases	Percentage	No.ofcases	Percentage
1.	25 - 35	6	30 %	6	30 %
2.	36 - 45	6	30 %	10	50 %
3.	46 - 55	8	40 %	4	20 %

The above table shows that the incidence is more in 4th, 5th decades.

Out of 20 In-patients, 30% of the cases were in Vatha Kaalam, 70% of cases were in Pitha Kaalam. Out of 20 Out-patients, 30% of the cases were in Vatha Kaalam, 70 % of cases were in Pitha kaalam. **This shows that majority of the cases were affected in Pitha Kaalam**.

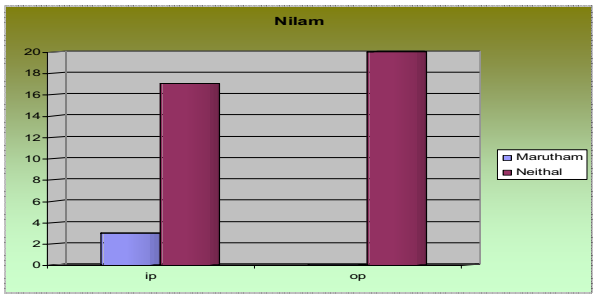


4. Thinai:

Table - 3. Illustrates the distribution with respect to Thinai:

SI. No	Thinai	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Kurinji	-	-	-	-
2	Mullai	-	-	-	-
3	Marutham	3	15	-	-
4	Neithal	17	85	20	100
5	Paalai	-	-	-	-

The above table shows, most of the patients were **from Neithal Nilam**.

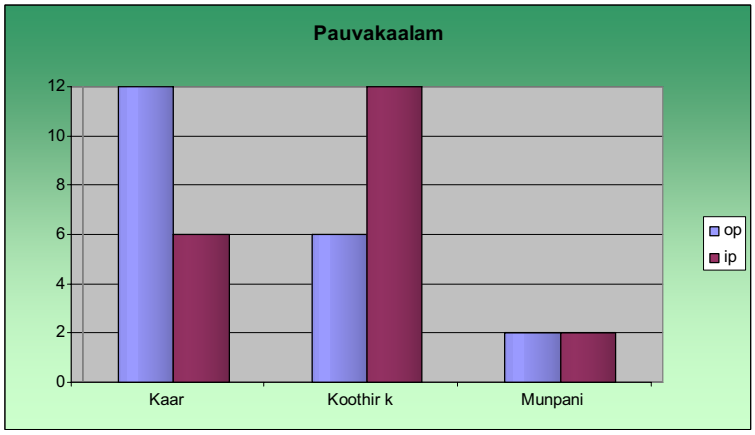


4.Paruva Kaalam:

Table– 4. Illustrates the incidence of the disease with respect to Kaalam:

SI. No.	Paruva Kaalam	Out - Patients		In - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Kaar kaalam	12	60	6	30
2	Koothir kaalam	6	30	12	60
3	Munpani kaalam	2	10	2	10
4	Pinpani kaalam	-	-	-	-
5	Elavenir kaalam	-	-	-	-
6	Mudhuvenir kaalam	-	-	-	-

From the above table it is clear that majority of patients were **admitted in Kaarkalam and Koothir kaalam and some of cases in Munpani kaalam.**



5. Occupational status:

Since occupational history is closely relates with the exacerbation of the existing condition.

Table - 5 illustrates the Occupational status:

SI.NO	Occupation	No. of cases	Percentage (%)
1.	Non workers	13	32.5
2.	Office workers	7	17.5
3.	Teachers	2	5
4.	Coolies	18	45
5.	Total	40	100.0

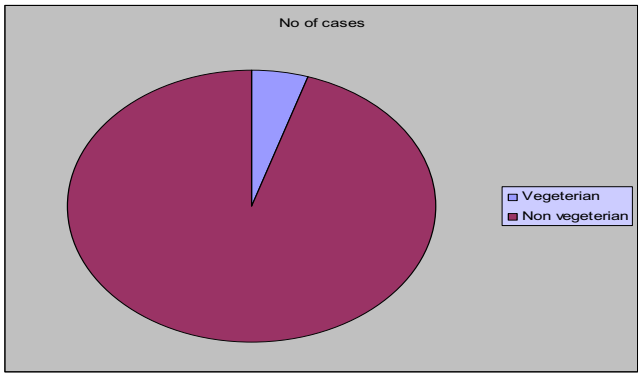
Out of 40 patients **45 % of cases are coolies**, 32.5 % of cases are Non workers and 17.5 % are Office workers.

6. Diet reference:

Table –6. illustrates the Diet:

SI.NO	Food habits	No of cases	Percentage (%)
1.	Vegeterian	2	5 %
2.	Non vegeterian	38	95 %
3.	Total	40	100

Among 40 cases **95 % of the cases are non vegeterian** and 5 % of the cases are vegeterian. It indicates non vegeterian diet may prone or aggravate this disease.

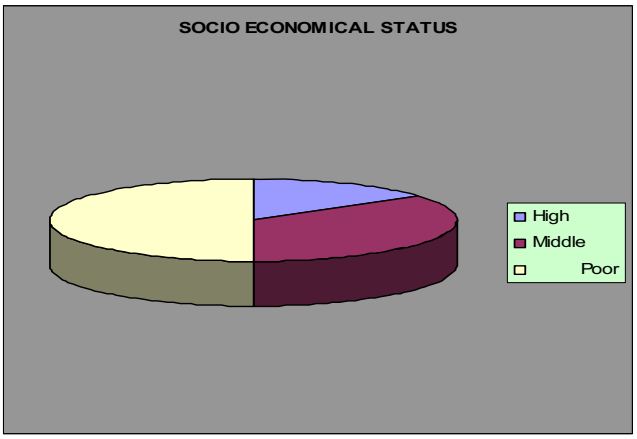


7. Socio-Economic status:

Table – 7. Illustrates the Socio-Economic status.

SI. No	Socio-Economical Status	No. of Cases	Percentage
1.	High	6	15 %
2.	Middle	14	35 %
3.	Poor	20	50 %

The above table shows, **most of the patients affected by this disease belongs to Poor Socio-Economic status.**

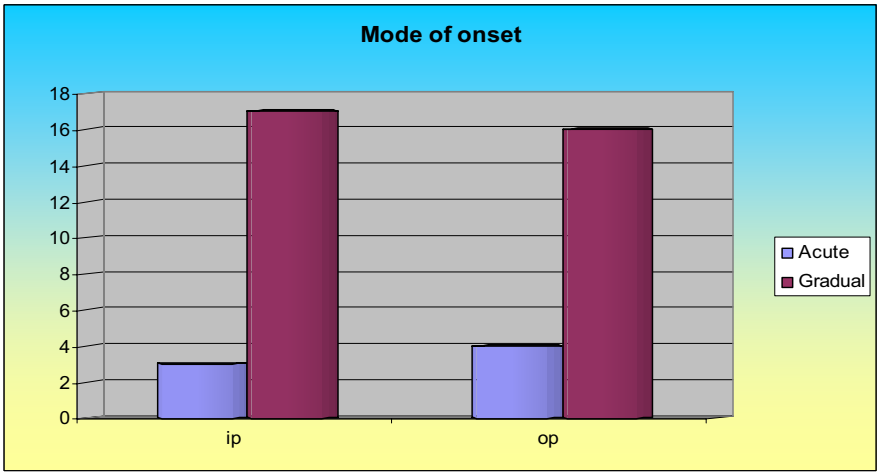


8. Mode of Onset:

Table 8. Illustrates the Mode of onset:

S.NO	Mode of onset	In patients		Out patients	
		No of cases	Percentage	No of cases	Percentage
1	Acute	1	5	4	20
2	Gradual	19	95	16	80

Above table shows most of the cases **had gradual onset**.

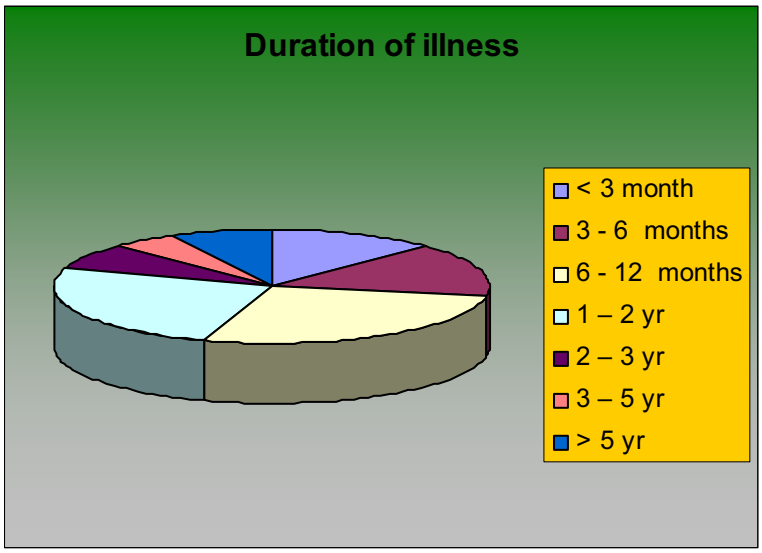


9. Duration of Illness:

Table – 9. Illustrates the Duration of Illness.

SI. No.	Duration of Illness	No. of Cases	Percentage
1	Below 3 month	5	12.5
2	3 - 6 months	6	15
3	6 - 12 months	11	27.5
4	1 – 2 yr	10	25
5	2 – 3 yr	3	7.5
6	3 – 5 yr	2	5
7.	More than 5 yr	3	5
8.	Total	40	100

From the table it is clear that **most of the cases were affected in the duration of 6 - 12 months**.



10.Clinical Manifestations:

Table – 10. Illustrates the Symptoms of the Disease.

S.no	Symptom	Before treatment		After treatment			
		No of cases	Percentage (%)	**Relieved (No of cases)**	Percentage (%)	**Reduced (No of cases**	Percentage (%)
1	Joint pain	**40**	100	**11**	27.5	**28**	70
2	Major jt swelling	**40**	100	**5**	12.5	**35**	87.5
3	Minor jt swelling	**40**	100	**12**	30	**28**	70
4	Restricted movement	**24**	60	**4**	16.6	**20**	83.3
5	Morning stiffness	**40**	100	**6**	15	**34**	85
6	Sleeplessness	**30**	75	**4**	10	**26**	65
7	Loss of appetite	**23**	57.5	**7**	17.5	**16**	40

Among the 40 cases, before the treatment all the cases had joint pain, major and minor joint swelling. 60 % of the case had restricted movement, 75 % of the cases had sleeplessness and 57.5 % of cases had loss of appetite.

After the treatment

- Joint pain relieved in 27.5 % of cases and reduced in 70% of cases.
- Major joint swelling relieved in 12.5 % of cases and reduced in 87.5 % of cases.
- Minor joint swelling relieved in 30 % of cases and reduced in 70 % of cases.
- Restricted movement relieved i 16.6 % of the cases and reduced in 83.3 % of cases.
- Morning stiffness relieved in 15 % of cases and reduced in 85 % of cases.

- Sleeplessness relieved in 10 % of cases and reduced in 65 % of cases.
- Loss of appetite relieved in 17.5 % of cases and reduces in 40 % of cases.

11. Systemic Examination (Extra articular features):

Table – 11. Illustrates the signs of Systemic Examination.

SI. No	Signs	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Subcutaneous nodules	4	20	-	-
2	Muscle wasting	4	20	3	15
3	Respiratory system(Breathlessnes)	5	25	3	15
	Horseness of voice	-	-	2	10
4	Nervous system (Peripheral neuritis)	3	15	2	10

Out of 20 In-Patients, 20% of the cases had subcutaneous nodules, 20% of the cases had muscle wasting, 15% of the cases had peripheral neuritis and 25 % of the cases had breathlessness.

Out of 20 Out-Patients 15 % of the cases had muscle wasting, 10% of the cases had central nervous system involvement, 10 % of the cases had horseness of voice and 15 % of the cases had breathlessness.

12. Individual joints involvement:

Table – 12. Illustrates the incidence of individual joints involvement.

SI. No.	Joints involved	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Proximal inter phalangeal Joints	20	100	20	100
2	Metacarpo-phalangeal Joints	20	100	20	100
3	Wrist Joint	20	100	16	80
4	Elbow Joint	8	40	9	45
5	Shoulder Joint	9	45	6	30
6	Temporomandibular Joint	2	10	1	5
8	Cervical spine	9	45	6	30
9	Lumbar spine	4	20	3	15
10	Hip Joint	2	10	3	15
11	Knee Joint	18	90	17	85
12	Ankle Joint	20	100	18	90
13	Meta-tarso phalangeal Joints	12	60	11	55

From the above table it is clear that in all the patients' proximal interphalangeal joints, metacarpo-phalangeal joints, wrist joint, ankle joint and knee joint gets more affected.

13. Deformity of Joints:

Table – 13 illustrates the distribution with respect to Deformity of Joints.

S. No	Deformity	In-Patients		Out-Patients	
		No of cases	Percentage	No of cases	Percentage
1	Swan neck deformity	2	10	-	-
2	Z shaped thumb	2	10	-	-
3	Ulnar deviation of fingers	3	15	1	5
4	Ulnar deviation of toes	3	15	2	10
5	Hallus valgus	2	10	-	-

From the table it is clear that in both Out-Patients and In-Patients

7.5% of the cases had foot deformity, Swan neck deformity was seen in 10% of cases, Z shaped thumb was seen in 10 % ofcases, ulnar deviation of fingers was seen in 10% of Out-patients, Hallus valgus seen in 10 % of cases.

14. Gradation of Pain.

Table – 14. Illustrates the Grades of Pain in before and after to the treatment:

S.NO	PAIN	Before treatment	After treatment (No of Cases)		
		No of cases	Relieved	Reduced	No change
1	Mild	11	8	3	-
2	Moderate	18	2	10	6
3	Severe	11	-	7	4

From the above table,

Before the treatment 11 cases had mild pain, after the treatment pain relieved in 8 cases, reduced in 3 cases.

Before the treatment 18 cases had moderate pain, Out of this after the treatment pain relieved in 2 cases, reduced in 10 cases and moderate pain still persist in 6 cases.

Severe pain in 11 cases, after this treatment pain reduced in 7 cases and in 4 cases no changes occur.

15. Grading of Restricted movements:

Table – 15. Illustrates the Grading of Restricted movements.

SI. No	Grading of rheumatoid arthritis	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	I – no restriction in normal activities	2	10	4	20
2	II – moderate restriction	10	50	8	40
3	III – marked restriction	7	35	8	40
4	IV – confined to bed	1	5	-	-

Most of the cases come under moderate and marked restriction.

16 Disturbances in Mukkutram:

Table – 16. Illustrates the disturbances in Mukkutram.

a. Disturbances in Vatham:

SI. No	Vatham	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Praanan	5	25	3	15
2	Abaanan	12	60	9	45
3	Viyaanan	20	100	20	100
4	Udhaanan	-	-	2	10

5	Samaanan	20	100	20	100
6	Naagan	-	-	-	-
7	Koorman	-	-	-	-
8	Kirukaran	17	85	18	90
9	Devathathan	16	80	14	70

In all the cases Viyaanan, Samaanan gets affected due to pain, restricted movements and difficulty to perform locomotive action. Devathathan affected in most of the cases due to sleeplessness and Abaanan were affected in some of the cases due to constipation. Pranan also affected in some cases due to breathlessness Uthanan affected in 10 % of out patients due to horseness of voice.

b. **Disturbances in Pitham:**

SI. No	**Pitham**	**In - Patients**		**Out - Patients**	
		No. of Cases	**Percentage**	**No. of Cases**	**Percentage**
1	Anal pitham	17	85	18	90
2	Ranjaga pitham	20	100	20	100
3	Prasaga pitham	4	20	5	25
4	Alosaga pitham	5	25	7	35
5	Saathaga pitham	20	100	20	100

All the cases get affected with Sathaga pitham and Ranjaga pitham, anal pitham affected due to loss of appetite Prasagam affected in some cases due to heat presents over the joints.

c. Disturbances in Kabham:

SI. No	Kabham	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Avalambagam	20	100	20	100
2	Kilethagam	17	85	18	90
3	Pothagam	-	-	-	-
4	Tharpagam	5	25	7	35
5	Santhigam	20	100	20	100

Table shows that all the cases get affected with Avalambagam, Kilethagam and Santhigam due to pain, swelling, restricted movement and deformity over the joints. Kilethagam affected due to loss of appetite. Tharpagam affected in some cases due to impaired vision.

17. Involvement of Udal Thathukkal:

Table – 17. Illustrates the Involvement of Seven Udal Thathukkal.

SI. No	Udal thathukkal	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Saaram	20	100	20	100
2	Senneer	20	100	20	100
3	Oon	20	100	20	100
4	Kozhuppu	20	100	20	100
5	Enbu	20	100	20	100
6	Moolai	-	-	-	-
7	Sukkilam/Suronitham	4	20	3	15

Table shows, in all the cases Saaram, Senneer, Oon, Kozhuppu and Enbu gets affected. Suronitham affected in some cases due to menstrual irregularity.

Saaram affected due to general debility of the patients, Senneer affected due to ESR, Hb, RA factor & CRP variations, Oon affected due to swelling and muscle wasting. Kozhuppu affected due to restricted movements. Enbu affected due to deformity and pain over the joints.

18. Envagai Thervugal:

Table – 18. Illustrates the condition seen in Envagai Thervugal.

SI. No	Envagai thervugal	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Naa	5	25	3	15
	Pallor of the tongue				
	Coated tongue	12	60	9	45
2	Niram	4	20	5	25
3	Mozhi	-	-	2	10
4	Vizhi	5	25	3	15
	Pallor				
	Impaired vision	5	25	7	35
5	Malam	12	60	9	45
6	Moothiram				
	Neikuri				
	Vatha neer	8	40	9	45
	Pitha neer	3	15	3	15
	Kaba neer	9	45	8	40
7	Sparisam	20	100	20	100

8	**Naadi**				
	Vatha Pitham	12	60	11	55
	Pitha Vatham	5	10	7	35
	Vatha kabam	3	15	2	10

- Sparisam gets affected in all the patients due to heat and tenderness over the affected area. In all the cases Neerkuri showed straw yellow colour and less frothy. Amoung the 20 out patients 45 % of the patients showed vatha neer (aravena neelal), 40 % of the patients showed kaba neer (aazhipol paraval) and 15 % of the patients showed pitha neer (Muthu othu nitral).
- Out of 20 in patients 40 % of the patients showed vatha neer, 45 % of the patients showed kaba neer and 15 % of the patients showed pitha neer.
- Out of 20 in patients 60 % of the patients had Vathapitha Naadi and a few had Pithavatha Naadi and Vathakabam.
- Out of 20 out patients 55 % of the patients had vathapitha naadi, 35 % of the patients had Pitha vatha naadi and 10 % of the patients had vatha kaba naadi.
- 25 % of the in patients and 15 % of the Out patients had pallor.
- Out of 20 out patients 10 % of the patients had horseness of voice.
- Constipation occurred in 60 % of in patients and 45 % of out patients.

19. Investigations:

A. HB:

B V A – $P < 0.05$ – Moderately significant.

HB – Before treatment – 10.55 + 1.74

HB – After treatment – 11.06 + 1.92

In this study, after to the treatment moderate improvement occur in heamoglobin level.

B. ESR ½ hour:

Before treatment – 22.34 + 20.2

After treatment – 15.3 + 13.15

P < 0.001 – Highly Significant**.**

ESR 1 hour:

Before treatment – 43.85 + 35.58

After treatment – 31.45 + 27.64

P < 0.0007 – Highly significant.

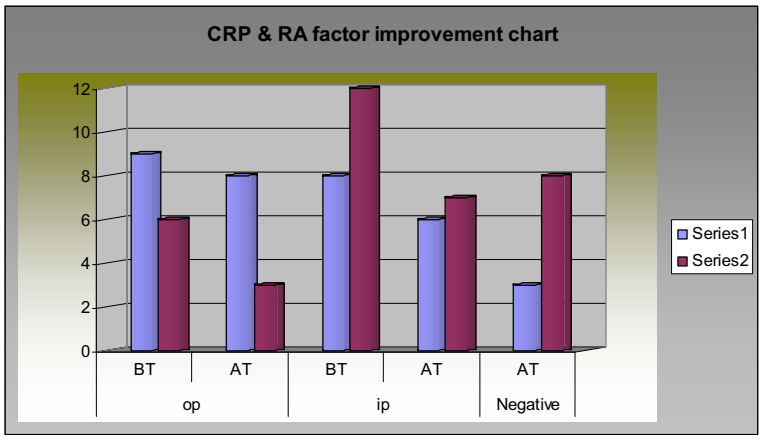
In this study, after to the treatment moderate improvement occur in ESR level.

C. Improvement table of RA factor and CRP:

S.NO	Out patients		In patients		No of negative cases
	No of cases		No of cases		
	BT	AT	BT	AT	AT
RA	9	8	8	6	3
CRP	6	3	12	7	8

Out of 40 cases 17 cases had RA factor positive and after to the treatment 3 cases only had negative result.

Out of 40 cases 18 cases had CRP positve and 8 cases had negative result in after the treatment.



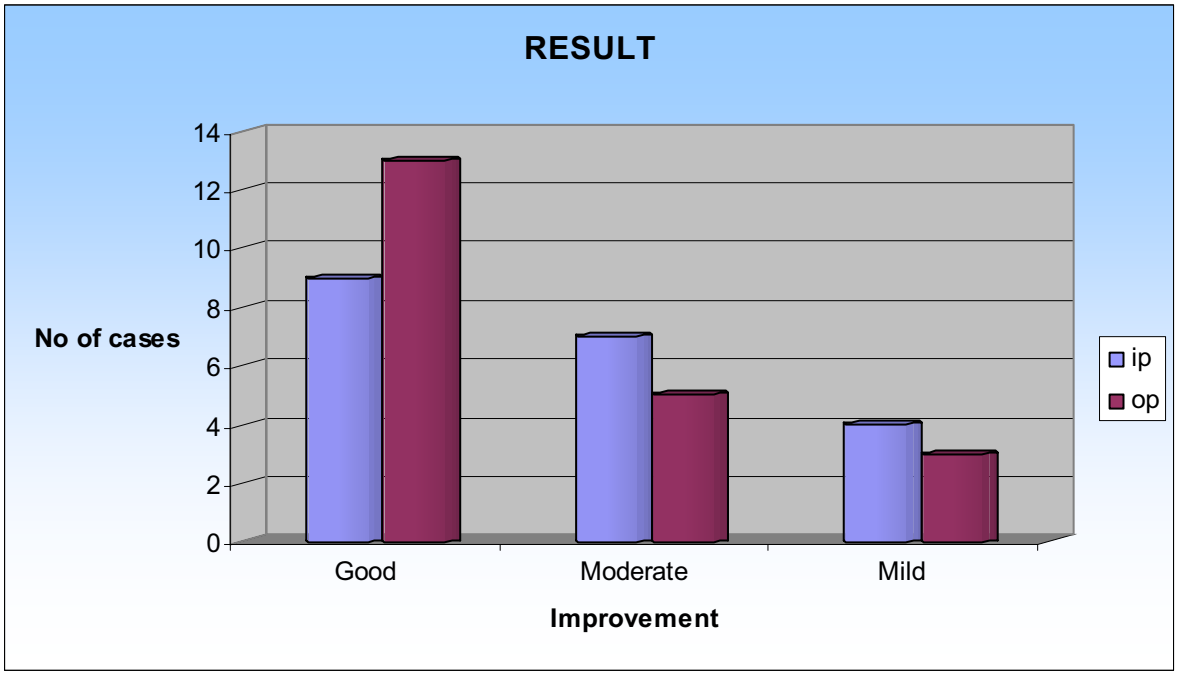
Improvement assessed by following assessments:

1. Pain assessment scale.
2. Restricted movement assessment grade.
3. Hb & Erythrocyte sedimentation rate variation.
4. RA factor & CRP variation.

Over all results.

SI. No	Results	In - Patients		Out - Patients	
		No. of Cases	Percentage	No. of Cases	Percentage
1	Good Improvement	9	45	12	60
2	Moderate Improvement	5	30	5	20
3	Mild Improvement	4	20	3	15
4	No Improvement	1	5	-	-
5	Deteriorated	-	-	-	-
	Total	20	100	20	100

Out of 20 In-Patients, 45 % of cases showed good improvement 30 % cases showed moderate improvement and 20 % of cases showed mild improvement. Out of 20 out-Patients, 60% of cases showed good improvement, 20% of cases showed moderate improvement and 15 % of cases showed mild improvement. 5 % of in patient showed no improvement.



OVERALL IMPROVEMENT FOR OUT PATIENT DEPARTMENT

S.No	Op. No	Age/Sex	Date of Treatment Starting	End of The Treatment	Improvement	Duration of illness
1.	A.L.9173	37/F	09.08.08	02.09.08	Good	3 month
2.	A.L.8950	31/F	09.08.08	02.09.08	Good	3 month
3.	A.m.48	55/F	13.08.08	04.09.08	Good	> 1 yr
4.	A.m.732	29/F	18.08.08	08.09.09	Mild	> 1 yr
5.	A.L.7238	42/F	11.09.08	02.10.08	Mild	> 6 month
6.	A.K.271	39/F	17.08.08	08.10.08	Good	3 month
7.	W.368	44/F	20.08.08	11.09.08	Good	1 yr
8.	A.m.22	38/F	13.08.08	04.09.08	Good	1 1/2 yr
9.	A.m.777	33/F	17.08.08	09.09.09	Good	> 6 month
10.	A.m.825	29/F	17.08.08	09.09.08	Good	> 6 month
11.	A.m.1838	38/F	10.9.08	02.10.08	Moderate	8 month
12.	A.m.4364	46/F	09.09.08	29.09.08	Moderate	3 month
13.	O.5893	32/F	11.09.08	03.10.08	Moderate	6 month
14.	O.2447	40/F	04.09.08	24.09.08	Good	> 3 month
15.	A.N.1856	42/F	13.10.08	04.10.08	Good	1 1/2 yr
16.	A.N.1846	55/M	04.10.08	25.10.08	Moderate	1 yr
17.	A.m.191	48/M	14.08.08	05.09.08	Good	> 6 month
18.	A.N.1150	38/F	10.10.08	01.11.08	Moderate	4 month
19.	A.N.4353	45/F	11.10.08	02.11.08	Good	5 month
20.	A.N.5285	32/F	22.10.08	13.11.08	Mild	8 month

OVERALL IMPROVEMENT FOR IN PATIENT DEPARTMENT:

S.No	IP. No	Age/Sex	Date of Admission	Date of Discharge	Treatment days in IP	Improvement	Duration of illness
1.	1074	34/F	08.08.08	29.08.08	20	Good	< 1 yr
2.	1103	30/F	21.08.08	12.09.08	20	Mild	< 1 yr
3.	1095	43/F	19.08.08	11.09.08	20	Moderate	> 1 yr
4.	1097	40/F	20.08.08	12.09.08	20	Good	> 5 yr
5.	1631	25/M	16.09.08	29.09.08	12	Good	< 3month
6.	1627	47/M	16.09.08	04.10.08	18	Good	< 1 yr
7.	1675	52/M	04.10.08	13.10.08	08	Good	> 6 month
8.	1195	55/F	29.09.08	10.10.08	10	Good	> 6 month
9.	1628	32/M	16.09.08	14.10.08	28	Moderate	> 4 yr
10.	1202	50/F	04.10.08	24.10.08	20	Moderate	> 2 yr
11.	1216	36/F	10.10.08	19.10.08	08	Moderate	> 3 yr
12.	1221	48/F	15.10.08	24.10.08	08	Good	> 1 yr
13.	1622	30/M	15.09.08	22.09.08	07	Moderate	2 ½ yr
14.	1224	36/F	16.10.08	31.10.08	15	Moderate	> 4yr
15.	1205	55/F	06.10.08	31.10.08	24	Moderate	> 1 yr
16.	1211	50/F	07.10.08	31.10.08	22	Mild	< 5 month
17.	1212	36/F	09.10.08	31.10.08	20	Mild	> 5 yr
18.	1697	36/F	13.10.08	31.10.08	18	Good	1 yr
19.	1289	40/F	18.11.08	08.12.08	19	Good	> 2 yr
20.	1290	38/F	18.11.08	10.12.08	20	Mild	2 yr

Ayothidhasar Pandithar Hospital, National Institute of Siddha, Tambaram sanatorium.

IN PATIENTS SEROLOGICAL IMPROVEMENT REPORT:

S.NO	IP .NO	RA factor		CRP	
		Before treatment	After treatment	Before treatment	After treatment
1.	1103	Pos	Pos	Pos	-
2.	1095	Pos	Pos	Pos	Neg
3.	1097	Pos	Pos	Pos	Pos
4.	1631	Neg	Neg	Pos	Pos
5.	1195	Pos	Neg	Pos	Pos
6.	1202	Pos	Pos	Pos	Neg
7.	1216	Neg	Neg	Pos	Neg
8.	1221	Neg	Neg	Pos	Pos
9.	1224	Pos	Pos	Pos	Pos
10.	1205	Pos	Neg	Pos	Pos
11.	1211	Pos	Pos	Pos	Pos
12.	1212	Neg	Neg	Pos	Pos
13.	1697	Pos	Neg	Neg	Neg
14.	1622	Neg	Neg	Pos	Pos
15.	1289	Pos	Pos	Pos	Pos
16.	1290	Pos	Pos	Neg	Neg

Ayothidhasar Pandithar Hospital, National Institute of Siddha, Tambaram sanatorium.

OUT PATIENTS SEROLOGICAL IMPROVEMENT REPORT:

S.NO	OP .NO	RA factor		CRP	
		Before treatment	**After treatment**	**Before treatment**	**After treatment**
1.	AL.9173	Pos	Pos	Neg	Neg
2.	Am.732	Pos	Pos	Pos	Pos
3.	AL.7238	Pos	Pos	Neg	Neg
4.	W.368	Pos	Pos	Pos	Neg
5.	Am.22	Pos	Pos	Neg	-
6.	A.m.825	Pos	Pos	Pos	Neg
7.	Am.1838	Pos	Pos	Neg	Neg
8.	1846	Pos	Pos	Pos	Neg
9.	AN.5285	Pos	Pos	Neg	Neg
10.	Am.777	Neg	Neg	Pos	Neg
11.	O.5893	Neg	Neg	Pos	Pos

TABLE ILLUSTRATES THE IMPROVEMENT OF HEAMOGLOBIN & ESR:

IN PATIENTS:

S. NO	**IP.NO**	**Haemoglobin**		**ESR**			
		Before treatment	**After treatment**	**Before treatment**		**After treatment**	
				½ hour	**1 hour**	**½ hour**	**1 hour**
1	1074	10.8	12.1	18	25	04	12
2	1103	09.0	09.7	22	46	26	50
3	1095	09.7	08.2	20	44	08	16
4	1097	08.2	08.2	08	16	20	40
5	1631	11.1	13.7	14	30	11	22
6	1627	09.7	10.2	14	28	6	18
7	1675	09.6	13.1	18	36	12	24
8	1195	11.5	12.2	16	32	08	16
9	1628	13.1	15.5	06	12	06	12
10	1202	09.4	11.0	18	36	12	24
11	1216	10.8	12.0	30	60	30	60
12	1221	08.5	08.0	10	20	06	14
13	1224	12.0	12.2	26	52	12	24
14	1205	11.3	13.5	10	22	20	40
15	1211	08.5	10.5	120	200	70	152
16	1697	14.0	11.1	16	32	20	40
17	1622	08.2	09.0	42	90	28	60
18	1289	09.4	10.0	60	124	45	92
19	1290	12.6	09.0	02	04	07	14
20	1212	09.4	09.5	15	30	10	20

TABLE ILLUSTRATES THE IMPROVEMENT OF HEAMOGLOBIN & ESR:

OUT PATIENTS:

S. NO	OP. NO	Haemoglobin		ESR			
		Before treatment	After treatment	Before treatment		After treatment	
				½ hour	1 hour	½ hour	1 hour
1	AL.9173	12.1	10.6	04	10	06	12
2	AL.8950	09.2	09.2	15	30	08	16
3	Am.48	08.7	10.6	10	22	04	08
4	Am.191	11.2	10.7	12	24	08	16
5	Am.732	08.7	08.2	12	25	06	12
6	AL.7238	06.8	08.2	50	100	20	40
7	Ak.271	09.7	15.0	48	82	04	08
8	W.368	09.7	10.7	25	50	10	20
9	Am.22	12.1	10.2	08	16	20	40
10	Am.777	10.2	10.8	30	60	20	40
11	Am.825	12.2	11.6	30	60	35	72
12	Am.1838	10.7	11.0	16	32	08	16
13	Am.4364	11.0	11.2	22	46	04	08
14	O.5893	09.7	10.0	15	30	30	60
15	O.2447	10.6	12.1	24	48	14	28
16	AN.1856	11.6	11.8	08	16	04	08
17	1846	12.6	13.0	22	44	12	28
18	AN.1150	13.6	13.4	14	28	12	24
19	AN.4353	10.3	11.2	16	32	06	12
20	AN.5285	14.5	14.5	30	60	20	40

DISCUSSION

DISCUSSION:

The main aim of treatment is to keep the Trithodam in equilibrium state, and to keep the inflammatory process at a minimum there by preserving joint motion, reducing constitutional symptoms, maintaining healthy muscles, preventing joint stiffness, restricted movements and the development of deformity,

40 cases (20 Out-Patients and 20 In-Patients) were selected from the patients reporting in Pothu maruthuvam department, Ayothidoss pandithar hospital of NIS, satisfying inclusion and exclusion criteria will be eligible for admission to the trial. To balance the altered three thathus purgative was given on previous day to start the treatment. Hence all the patients were given Merugulli thylam 10 ml with warm water and were put on diet to take only butter milk.

The patients were treated for a period of 20 days with the trial drugs such as Rasapralaya chenthuram was given internal at the dose of 100 mg b.i.d with the vehicle of thirikaduku chooramam and adjuvant of honey and Navanatha siddhar thylam applied externally over affected joints. Out-Patients were reviewed once in seven days. Clinical and assessments of In-Patients were reviewed daily.

Before starting the treatment, instructed the patients to stop if any medicines taken internally. All the patients were advised to follow strict diet restriction and peaceful life style to normalize the immune mechanism. Advised the patient to take warm water bath and hot fermentation therapy to reduce the stiffness. Ottradam was done over the inflammatory joints using Vatha Narayanan leaves, Erukku leaves, Notchi leaves, Neem leaves and Thazhuthalai leaves.

Mild exercises advised to reduce the stiffness and restricted movements. Savasana, breathing excercise also advised to relief stress and sleeplessness. The triggering factors were also studied. Daily observation was made during this study.

The observations discussed below:

Sex Distribution:

From this study it is clear that the **incidence was higher in females** than in males. In this study male and female **ratio occur in 1:4**. It indicates Udhiravatha Suronitham is predominant in females.

Age Distribution:

The study reveals that the incidence of disease was more **predominant in 4th, 5th decades** of life. Further it was concluded that majority of cases **(70 %) were affected in their Pitha kaalam** (i.e. Middle 33 years and 4 months).

Thinai:

In this study most of the cases comes from **Neithal nilam**.

"Ø൭ö¾É¢Ä§Á ¾íÌ Å£¼¡Ìõ"

According to siddha literature Pathartha guna chinthamani mentioned vatha diseases occurs more in Neithal nilam.

Paruva kaalam:

Siddha literature Yugi vaithya chinthamani mentioned

"¬¾¨Äô À°¢§Â¡Î ¸¡÷ò¾¢ ¾ýÉ¢ø
«¼Õ§Á ÁüÈ Á¡¾í¸û ¾ýÉ¢ø"

In this study most of the cases admitted in Karkaalam, Koothirkaalam.

Occupational status:

Most of the cases are (45 %) coolies and non workers (32.5%). Mostly coolies belongs to poor socio economical status**,** their poverty and stress induce this disease. Most of the non workers are house wife.

Diet reference:

Most of the cases **(95 %) were non vegeterian** and Non vegeterian diet may aggravates the disease process.

Socio-Economic Status:

Majority of the cases (50 %) belongs to poor socio-economical condition. It indicates malnutrition, lowered immune responses and emotional stress made them more prone to this disease.

Etiological Factors:

From this study the etiology of the disease remains unknown. However changes in food habits and life style predisposes to the derangement of three humors resulting in the causation of disease.

Mode of Onset:

In my observation most of the patients comes with gradual onset. Failure to follow medical advice regarding dietary restrictions, stress and strain, changes in life style all accounts for the disease to become chronic.

Duration of Illness:

Most of the cases (27.5 %) were affected with the **duration of illness between 6 – 12 months**. 25% of cases were affected with duration of illness 1 – 2 years.

Clinical Manifestations:

In this study, joint pain and major joint swelling relieved in some of the cases and reduced in most of the cases.

Minor joint swelling relieved in 30 % of cases and reduced in 70 % of cases and Restricted movement reduced in 60 % of cases.

Sleeplessness and Loss of appetite are relieved in some cases only and reduction of some degree in most of the cases.

After treatment, the early morning stiffness which occured for a period of >1 hr has been reduced to 10 – 20 min.

Systemic Examination:

Out of 40 cases, minimal cases only had subcutaneous nodules, muscle wasting and peripheral neuritis. After this treatment there are no changes in subcutaneous nodules. There was mild improvement in muscle wasting and peripheral neuritis.

Deformity:

In this study there is no improvement in deformity.

Changes in functional ability:

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S. NO	Grading of Restricted movement	Before treatment		After treatment	
		No. of Cases	Percentage	No. of Cases	Percentage
1	I – no restriction in normal activities	6	15	10	25
2	II – moderate restriction	18	45	19	47.5
3	III – marked restriction	15	37.5	10	25
4	IV – confined to bed	1	2.5	1	2.5

Among the 40 cases, before treatment 37.5 % of cases belongs to G III and after treatment 12 .5 % of cases were reducing their restriction.

After to treatment 25 % of cases had no restriction in their normal activities.

Before to treatment 2.5 % of cases belong to G IV and after to treatment there is no changes occur.

MUKKURAM BASIS:

A. Disturbances in Vatham:

During the treatment Abanan affected (constipation) in some cases and advised to take more greens, vegetables and water. Most of the cases relieved from Constipation and for some cases only prescribed nilavagai chooranam.

In most of the cases devathathan affected due to sleeplessness and advised to do savasana and breathing exercise; in my study due to these patients get some relief.

B. Disturbances in Kabham:

Santhigam affected in all cases due to pain, swelling and restricted movement. After the treatment moderate improvement occurs in pain and swelling, mild reduction occurs in restricted movement.

Involvement of Seven Udhal Thathukkal:

Among 20 In-Patients and 20 Out-Patients, Saaram, Senneer, Oon, Kozhuppu and Enbu were affected in all the cases.

Affected Saaram produces fatigue in patients. After the treatment it releives in some patients, it may be due to medicine and advised to take nutricious diet.

Affected Senneer produces variation in the level of Hb, increased ESR, and positive CRP & Rheumatoid factor. After the treatment from the statistical analysis moderate improvements occur in Hb level **(B V A – P < 0.05 – Moderately significant) and ESR level (P + 0.0007 – Highly significant).**

Affected Kozhuppu produces restriction of movements in joints and after the treatment 25 % of cases had no restriction in their normal activities. 12 .5 % of cases were reduce their restriction from GIII restricted movement.

Affected Enbu produces joint pain, joint deformity. After to this treatment there is no changes occur in deformity and pain reduced in most of the cases.

Envagai Thervugal:

Among 40 cases ***Naa*** was affected in most (65 % of IP & 75 % of OP) the cases due to coated tongue. After reducing constipation, coated tongue was disappearing in most cases.

Pallor of the tongue and pallor of palpabral conjuctiva (due to ***vizhi*** affected) occur in minimal cases only and after to treatment paleness was reduced.

Mozhi was affected in 10 % of OP cases due to hoarseness of voice and after to this treatment horseness persist in one case.

Malam was affected in 60% of In-Patients and 45% of Out-Patients having constipation, advised to take more greens, vegetables and water. Most of the cases relieved from Constipation and for some of the cases only prescribed nilavagai chooranam.

Sparisam was affected in all the cases producing swelling and warmth in the painful joints and after to treatment swelling relived in some cases and reduced in most of the cases.

Regarding Moothiram, neerkuri was normal in all the cases.

- ***Neikuri*** showed Vatha Neer (Spread likes snake) in 40% of In-Patients and 45% of Out-Patients.
- 15% of In-Patients and out-Patients showed pitha neer.
- 45 % of In-patients and 40 % of out patients showed kaba neer.

  After to the treatment there is no significant changes occur in neikuri.

Investigations:

After to this treatment most of the cases had some improvement in their Hb level, CRP & RA factor. Statistical analysis in serological report indicates significant changes occur in Hb and ESR level.

S.NO	**Out patients**		**In patients**		**No of negative cases**
	No of cases		**No of cases**		
	BT	**AT**	**BT**	**AT**	**AT**
RA	**9**	**8**	**8**	**6**	**3**
CRP	**6**	**3**	**12**	**7**	**8**

Out of 40 cases 17 had RA factor positive and after to the treatment 3 cases only had negative result.

Out of 40 cases 18 cases had CRP positve and 8 cases had negative result in after the treatment

Biochemical analysis:

- Qualitative analysis of Rasapralaya chenthuram done in C.L. Beid metha college of Pharmacy, Thoraippakkam reveals Rasapralaya chenthuram contains Calcium, Iron, Magnesium, Zinc etc.
- Quantitative analysis done in Mettex laboratory by Atomic absorbtion method, Rasapralaya chenthuram conatains 622 mg/ kg of Magnesium, 0.49 % of Calcium, 946 mg/kg of Iron and 13.1 mg/ kg of Zinc.
- Zn plays a vital role in immunity and it prevents infection. It also acts as an antioxidant. Iron is essential for transport of oxygen to the tissues. In Uthiravatha suronitham, anemia is one of the features. Statistical analysis from laboratory reports showed Moderate significant in haemoglobin level. Calcium is necessary for the regulation of acid base balance and water balance in the body and it also prevents the development of osteoporosis.

Toxicity study:

- Toxicological study of Rasapralaya chenthuram were done in C.L.Beid Metha college of Pharmacy, Thoraippakkam, Acute oral toxicity study on RPC did not exihibit any mortality in rat at the dose of 2000 mg/kg/po.
- In repeated oral toxicity study for 15 days at the dose of 500 mg/kg/poin rats, did not exhibit toxicity in Haematopoetic system and Liver. However the drug exhibited an increase in uric acid level after the administration for 15 days.
- Did not exhibit any significant changes in RBC count and Hb%. The bio markers of liver function tests did not show the evidence of liver toxicity. There were no significant changes in Haematological parameters like cholesterol, body weight, food, water intake and behavioural parameters.
- Pharmacological studies done in C.L.Beid Metha college of Pharmacy, Thoraippakkam reveals Rasapralaya chenthuram bears significant analgesic and Anti inflammatory actions in rats.The test drug showed maximum anti inflammatory activity at the end of 4 th hour to compared diclofinac sodium and Navanatha siddhar thylam had significant acute anti inflammatory activity.

- Anti arthritic study done in S.S.N.college reveals Rasapralaya chenthuram have moderate anti arthritic activity.

SUMMARY

SUMMARY

❖ The aim of the study is to evaluate the efficacy and safe chemotherapy for Uthiravatha suronitham.

❖ For the clinical study, 40 cases were selected based on the inclusion and exclusion criteria. Out of this 20 cases were treated in OPD and 20 cases were treated in IPD of Ayothidoss Pandithar Hospital of National Institute of Siddha, Chennai.

❖ Clinical diagnosis of Uthiravatha suronitham was done by Siddha and modern methodology.

❖ Investigations carried out before and after treatment and data were recorded in the proforma.

❖ A day before starting the trial drug treatment, purgation was given to correct the elevated mukkurams

❖ The trial medicines selected for both internal and external treatment were Rasapralaya chenthuram – 100 mg b.i.d with the adjuvant of honey, vehicle of thirikaduku chooranam and Navanatha siddhar thylam respectively.

❖ During the period of the treatment all the patients were put under pathiyam.

❖ The improvement of the patients was observed from the second day of the treatment itself in general and clinical assessments noted in daily progress chart. Observation made during the clinical study showed that the trial drug was clinically effective.

❖ It is more prevalent in Kaarkalam and Koothir kalam. Most of the patients are female and most of the patients were belongs to poor socio-economical status.

❖ Most of the patients had vatha pitha naadi and pitha vatha naadi. In neikkuri, vatha neer and kaba neer showed in most of the cases.

❖ In my observation stress, malnutrition and poor socio-economical status is aggravates this disease.

❖ During the study period, there was no drug reactions occur.

❖ In these studies out of 40 cases, 21 cases were good improvement, 10 cases were moderate improvement and 7 cases were mild improvement in clinical as well as laboratory investigation procedure also.

❖ As per our Siddha Materia medica the ingredients of the trial drugs were found to have the property of controlling vatha diseases.

❖ From the Acute toxicity study, the trial drug is safe even at higher dose of 2000 mg/kg/po.

❖ Repeated oral toxicity study for 15 days exhibited, alteration in uric acid level and the trial drug did not exhibit any alteration in the normal architecture of the kidney at the end of 15 days. Since there is no report on the kidney function test done in clinical study, it can be resonably assumed that the drug is safe for humans.

❖ The formulation exhibited significant anti oxidant activity and no change in the LPO activity in rat treated for 15 days.

❖ Pharmacological study showed the trial drug contains significant anti arthritic, anti-inflammatory and analgesic activity.

CONCLUSION

CONCLUSION

Acute toxicity study reveals that the trial drug is safe even at higher dosage of 2000 mg/kg/po but in repeated toxicity study there was a mild variation only in uric acid level at the dosage of 500 mg/kg/po. Since there are no reports on the kidney function test done in clinical study, it can be resonably assumed that the drug is safe for human.

Clinical study reveals that the trial drug shows good improvement (55 %, moderate, 25 %, mild and 17.5%) and No improvement in 2.5% of cases. There were no adverse effects found during the course of the treatment.

Because of the encouraging clinical results, if the study may be undertaken with the same drug for a prolonged period of time with more number of cases, it may become one of the milestones in treating Uthiravatha suronitham successfully.

ANNEXURES

Preparations and Properties of the Trial drugs

இரசபிரளய செந்தூரம்

§¾¨ÅÂ¡É °ÃìÌ¸û:

சுத்தி செய்த இரசம் 3 பலம் (105 கிராம்), சுத்தி செய்த நெல்லிக்காய்க் கெந்தகம் 2.½ பலம் (87.½ கிராம்), செம்முள்ளியிலைச் சாறு, செம்பரத்தம்பூச்சாறு, மிளகுத்தக்காளிச்சாறு, செருப்படிச்சாறு, மாதுளை இலைச்சாறு, மாதுளம்பூச்சாறு, இவை வகைக்கு செல்லத்தக்க அளவு.

செய்முறை:- மேற்படி இரண்டு சரக்கையும் தொந்தித்தரைத்து நன்றாகக் கறுத்தபின்பு மேற்கண்டபடி ஆறுவகைச் சாறுகளினாலும் ஒவ்வொரு நாள் உலர்த்தி முடிவாகச் செம்மையாக உலர்த்திப் பொடித்து ஏழு சீலைமண் செய்த கெங்காசலக் குப்பியில் அரைவாசியிட்டுக் குப்பிவாய்க்கு மாக்கல் மூடியிட்டுச் சீலைசெய்துலர்த்திச் செந்தூரப் பானையில் நாலுவிரற்கிடை மணலிட்டு தேன் மேல் குப்பியை வைத்துப் பானை நிறைய மணலிட்டு வட்டடுப்பிலேற்றித் தான் வழிபடும் கடவுளைத்துதித்து, ஒருசாதிச் சிறுவிறகால் ஒருசாமம் தீபாக்கினியாகவும் இரண்டு சாமம் கமலாக்கினியாகவும், இருபத்தொரு சாமம் காடாக்கினியாகவும் எரித்துக்குளிர ஆறவிட்டு, தான் வழிபடும் கடவுளைப் பூசைசெய்து ஏழைகளுக்கு அன்னமிட்டு, குப்பியை உடைத்துப் பார்த்தால் முருக்கம்பூப் போன்ற வண்ணமுள்ள செந்தூரமாய் இருக்குமஇ இதனைப் பொடிசெய்து புட்டியில் பத்திரப்படுத்தவும்.

அனுபானமும், தீரும்நோய்களும்:- **திரிகடுகை** இளவறுப்பாக வறுத்து இடித்தத்தூள் வகைக்கு 3 குன்றிமணியெடை (3.½ கிராம்) **தேன்** 1 வராகன் எடை, மேற்கண்ட செந்தூரத்தை அளவுப்படி சேர்த்து இரண்டு வேளையும் இருபது நாள் உட்கொள்ள சூலைகள், வாயுக்கள், வாதநோய்கள் ஆகியவை தீரும்.

நவநாதசித்தர் தைலம்:

சீம்மமுகி தழுதாழை யார்க்குமத் தங்குடஞ்
சித்திரம் வியாக்கிரிகையான்
சிந்துவா ரஞ்சடக் கரைதொடி மணிப்பலஞ்
சேர்காரி யங்குவாதம்
வெம்மையோ டெட்டிலொன் றாயிறெண் ணேரண்டம்
வேம்பிவை நெய்விடுபடிபடி
வேர்க்கொம்பு பதுமநா ளங்கடுகு கட்டமகில்
வெள்வசம் புக்கிரகந்தை
செம்மைதரு பாளித மரத்தைபூண்டிந்து
திப்பிலி யம்மூலமதுரந்
திரிபலை முசுக்கை சங்கீத முயர்கோளஞ்
செப்புமக மிவைகளையெலாங்
கம்மென மணப்பெழத் துகள்புரியொவ் வொன்றனிரு
க.ூசென விளாவிநன்றாக்
காய்ச்சிவடி நவநாத சித்தர்புரி தைலமிது
களமமிடு மணிவாரமே

பொருள்

ஆடாதோடை, தழுதாழை, எருக்கு, ஊமத்தை, சதுரக்கள்ளி, ஆமணக்கு, கண்டங்கத்திரி, கையாந்தகரை, நொச்சில் என்னும் வேர்கள் (9-ம்) வகை 1-க்கு (பலம்-20) ஆக நிறுத்திடித்துப் பாண்டத்திற் சேர்த்து (4-மரக்கால்) சலம்விட்டுக் காய்ச்சி (8-ல்) ஒரு பங்காகச் சுடுகையுடன் இறுத்த கஷாயத்தில் எள்ளுநெய், ஆமணக்கு நெய், வேப்பநெய் இவை மூன்றும் வகை 1-க்கு (படி-1) ஆகவிட்டு, சுக்கு, தாமரைவளையம், கடுகு, கோட்டம், அகில்கட்டை, வெள்வசம்பு, வசம்பு, செஞ்சந்தனம், சிற்றரத்தை, வெள்ளைப்பூண்டு, இந்துப்பு, கோரைக்கிழங்கு, திப்பிலி மூலம், அதிமதுரம், கடுக்காய், நெல்லிக்காய், தான்றிக்காய், முசுமுசுக்கைவேர், கிச்சிலிக்கிழங்கு, வாய்விளங்கம், என்னும் கற்கதிரவியம் (21-யும்) வாசனை யெழும்பும்படி நன்றாக இடித்து வஸ்திரகாயஞ்செய்த தூளை வகை 1-க்கு (பலம் 1.ூ2) ஆக எடுத்து மேற்படி எண்ணெயிலிட்டுக் கலக்கி சிறிய தீயினால் எரித்துப் பக்குவத்தில் வடித்து அக்கடத்திற்குச் சீலைமண் செய்து நெற்புடத்தில் (9 நாள்) வைப்பாயாக. இதுவே நவநாதசித்தர் தைலமாம்.

இதன் மகிமை:

மணிநாட்ட ணந்தெடுத்தம் மாதவர்பொற் பதம்பரவிப்
பிணியாளர் தங்கருமப் பீடையறச் செய்வனசெய்

தனியாரு டலவலத்தந் நெய்யிட்டப் பிப்பிடிக்கிற்
றணியாப் பலமருத்துந் தாவமுணுந் தாவமரோ

(9) நாளுங் கழித்தெடுத்து இதற்கு அதிகாரிகளாகிய நவநாதர் திருவடிகளை வணங்கி, நோயுற்றார் வினைக்குத் தக்க படிகருமசாந்தி செய்து கைலத்தைத் தொட்டு அழகிய சரீரத்தில் நோயிருக்கும் இடங்களில் பூசிப் பிடிப்பைபாயாகில், சிகிச்சைகளுக்கு வசப்படாத பற்பல **மஹா வாதரோகங்களும்** அக்கினியால் தகிக்கப்பட்ட காடுகளைப்போலகும்.

TRIAL MEDICINES

Rasapralaya chenthuram **Navanatha siddhar thylam**

ADJUVANT **VEHICLE**

S¾ý ¾¢Ã¢¸ÎÌ

ÝÃ½õ

INGREDIENTS OF RASAPRALAYA CHENTHURAM

Hybiscus rosa sinensis

Punica granatum

Solanum nigrum

Barleria Prionitis

Mollugo lotoidus

Sulphur

Mercury

இரசம் (Mercury)

வேறுபெயர்: இனிமை, சிவன்விந்து, சூதம், ஆதி.

சுவை: அறுசுவையும் சிறப்பாய் இனிப்பையும் உடையது.

வீரியம்: சீத, வெப்ப வீரியம்.

பிரிவு: துணைமருந்தின் பரிவையே அடைகிறது.

செய்கை: உடல் தேற்றி.
உடலுரமாக்கி.
வீக்கமுருக்கி.
மேகநாசனி.
உமிழ்நீர் பெருக்கி.
சிறுநீர் பெருக்கி.

பொது குணம்: 'விழிநோய் கிரந்தி குன்மம்மெய்ச்சூலை
புண்குட்டழிகாலில் விந்துவினால் அத்தை
வழியாய புரியுவிதி யாதும் புரிசனோ
யெல்லாம் இரியு விதி யாது மிலை"

இரசத்தினால் கண்நோய், கிரந்தி, குன்மம், சூலை, புண், குட்டம், போன்ற தோற்பிணிகள், வளி நோய்கள் குணமாகும்.

கந்தகம் (SULPHUR)

வேறு பெயர்: காரிழையின் நாதம், செல்விவிந்து, சக்திசக்தி, பீசம், செந்தூரத்தாத, தேவியுரம்.

சுவை: கைப்பு, துவர்ப்பு.

செய்கை: பித்தநீர் பெருக்கி.
மலமிளக்கி.
கிருமிநாசனி.
உடல்தேற்றி, வியர்வை பெருக்கி.

குணம்: "நெல்லிக்காய் கந்திக்கு நீள்பதினென் குட்ட மந்தம்
வல்லை கவிசை குன்ம வாயு கண்ணோய்
பொல்லாவிடிக்கடிவன் மேகநோய் வீறு சுரம் பேதி
திடக்கிரகணி கபம் போக்கும்"

நெல்லிக்காய் கந்தியினால் பதினென்குட்டம், மந்தம், குன்மவாயு, கண்ணோய், விடக்கடிவன், மேகநோய், சுரம், பேதி, கலம் போகும்.

மணத்தக்காளி (Solanum nigrum)

வேறு பெயர்: உலகமாதா, மிளதக்காளி, காகமசீ

சுவை: இனிப்பு

தன்மை: தட்பம்

பிரிவு: இனிப்பு

செய்கை: உடற்றேற்றி – Alternative

சிறுநீர்பெருக்கி – Diuetic

பொதுகுணம்: மணத்தக்காளிக்காய் மலமிளகுந் தானே மகாகபமும் போகும்
பலமிகுந்த வாதம்போம் பார்க்குள் - மலைபோற்
பணைத்துப்பூ ரித்தமுலைப் பாவாய்கேள்! நல்ல
மணத்தக்கா ளிக்காயை வாழ்த்து

மலத்தை இளகி கழிய செய்யும், ஐயத்தையம் வளிநோயையும் போக்கும்.

செருப்படை (Mollugo lotoidus)

வேறு பெயர்: செருப்படி

சுவை: கார்ப்பு

தன்மை: வெப்பம்

பிரிவு: கார்ப்பு

செய்கை: வெப்பமுண்டாக்கி ளுவஅைரடயவெ

பொதுகுணம்: செருப்படைக்கு வாதமந்தஞ் சேர்வான மேகம்
இழுப்படிகொள் பொல்லா இசிவும் - விருப்படிக்குஞ்
சூலையொடு வாதகுண்மஞ் தோற்றா தொழுநாளும்
வேலையொத்த கண்ணாய் விளம்பு

வளி, ஐயக்குற்றத்தால் பிறக்கும் நோய்கள் மந்தம், சூலை குன்மம், வெள்ளை இவற்றை நீக்கும்.

மாதுளைம்பூ (Punica granatum)

வேறு பெயர்: தாடிமம், மாதுளங்கம், பீசபுரம்

சுவை: துவர்ப்பு

தன்மை: தட்பம்

பிரிவு: கார்ப்பு

செய்கை: துவர்ப்பி யுளவசபைநவெ
பசித்தூண்டி ளுவழஅயஉாவஅை

பொதுகுணம்: வாந்திபித்த தோடமொடு மாறாக் கடுப்பலைஞ்
சேர்ந்துனின்ற மூலரத்தந் தீர்க்குங்கான் - மாந்தளிர்க்கை
மாதே! யிரந்தபுஷ்டி வல்லபலன் உண்டாகும்
பூதலத்துள் மாதுளையின்பூ

(Meaning) குருதி வாந்தி, வயிற்றுக்கடுப்பு, வெப்பம், இருதிமூலம் இவை போகும் குருதியைப்பெருக்கும். வன்மையைத் தரும்.

செம்பரத்தை (Hybiscus rosa sinensis)

வேறு பெயர்: சப்பாத்து, செம்பருத்தி

சுவை: இனிப்பு

தன்மை: தட்பம்

பிரிவு: இனிப்பு

செய்கை: மலமிளக்கி Laxative
வறட்சியகற்றி Emolient
உள்ளழளற்றி Demelcant
குளிர்ச்சியுண்டாக்கி சுநகசபைநசயவெ

பொதுகுணம்: செம்பரத்தை மேகவெட்டை தீராப் பிரமியொடு
வம்பிரத்த வெள்ளை வழுவழுப்பும் - வெம்பும்
பெரும்பாடு ரத்தபித்த பேதம் அகற்றும்
கரும்பா மொழியிலே! காண்

இதனால் வெள்ளை குருதி வெள்ளை, பெரும்பாடு குருதியழல் இவை நீங்கும்.

SEMMULLI (Barleria prionitis) :

Part used : Whole plant, Root, Leaf, Bark, Flower**.**
Action :
Hypoglycemic
Diuretic

Spasmogenic
Hypotensive
Hypothermic.

Use :

The plant has antiseptic properties, its decoction is used as a wash in dropy. The leaves and flowering tops are rich in soluble potassium salts and are valued as diuretic.

STATISTICAL ANALYSIS

HAEMOGLOBIN BEFORE AND AFTER TREATMENT COMPARISION:

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
hbbt	40	10.55	.2753087	1.741205	9.993136	11.10686
hbat	40	11.0675	.3027944	1.91504	10.45504	11.67996
diff	40	-.5175	.253182	1.601264	-1.029609	-.0053911

Ho: mean(hbbt - hbat) = mean(diff) = 0

Ha: mean(diff) < 0 Ha: mean(diff) ~= 0 Ha: mean(diff) > 0
t = -2.0440 t = -2.0440 t = -2.0440
P < t = 0.0239 P > |t| = 0.0477 P > t = 0.9761

ESR 1/2 Hour - BEFORE AND AFTER COMPARISION:

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
esrhbt	40	22.4	3.194707	20.2051	15.93809	28.86191
esrhat	40	15.3	2.079879	13.15431	11.09305	19.50695
diff	40	7.1	2.04055	12.90557	2.972597	11.2274

Ho: mean(esrhbt - esrhat) = mean(diff) = 0

Ha: mean(diff) < 0 Ha: mean(diff) ~= 0 Ha: mean(diff) > 0
t = 3.4795 t = 3.4795 t = 3.4795
P < t = 0.9994 P > |t| = 0.0013 P > t = 0.0006

ESR 1 Hour - BEFORE AND AFTER COMPARISION:

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
esr1bt	40	43.85	5.62601	35.58201	32.47032	55.22968
esr1at	40	31.45	4.371814	27.64978	22.60717	40.29283
diff	40	12.4	3.358838	21.24316	5.606108	19.19389

Ho: mean(esr1bt - esr1at) = mean(diff) = 0

Ha: mean(diff) < 0 Ha: mean(diff) ~= 0 Ha: mean(diff) > 0

t = 3.6918	t = 3.6918	t = 3.6918
P < t = 0.9997	P > |t| = 0.0007	P > t = 0.0003

Comparision of RA facto before and after treatment:

RABT | RAAT N	P | Total
N | 20	0 | 20
P | 3	17 | 20
Total | 23	17 | 40

Comparision of CRP before and after treatment

CRPBT | CRPAT N	P | Total
N | 17	0 | 17
P | 7	12 | 19
Total | 24	12 | 36

Due to adequate sample size, the significance of treatment could not be statistically determined.

Bio – Chemical Analysis

NATIONAL INSTITUTE OF SIDDHA, TAMBARAM SANATORIUM, CH-47.

BIO CHEMICAL ANALYSIS

S.NO	EXPERIMENT	OBSERVARTION	INFERENCE
1.	Appearance of the sample	Dark brown in colour.	
2.	**Solubility** a. A little of the sample is shaken well with distilled water. b. A little of the sample is shaken well with con. HClL / Con. H2So4.	Sparingly soluble.	Presents of Silicate
3.	**Action of Heat** A small amount of the sample is taken in a dry test tube and heated gartly at first and then strong.	White fumes evolved.	. Presence of Carbonate.
4.	**Flame Test** A small amount of the sample is made into a pasted with con. HCL in a watch glass and introduced into non – luminous part of the bunsen flame.	Blush green flame not appeared.	Absence of copper.
5.	**Ash Test** A filter is soaked into a mixture of sample and cobalt nitrate solution and introduced into the bunsen flame and ignited	Yellow colour flame	Presents of sodium.

Preparation of Extract

5 gm of Panchalavana Mezhugu is weighed accurately and placed in a 250 ml clean beaker and added with 50 ml of distilled water. Then it is boiled well for about 10minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.NO	EXPERIMENT	OBSERVARTION	INFERENCE
I	**Test for Acid Radicals**		
1.	**Test for Sulphate** 2 ml of the above prepared extract is taken in a test tube to this added 2 ml of 4% ammonium oxalate solution.	Cloudy appearance present.	Presence of sulphate
2.	**Test of Chloride** 2 ml of the above prepared extract is added with 2ml of dil – Hcl is added until the effervescence ceases off.	Cloudy appearance presents.	Presents of Chloride.
3.	**Test for Phosphate:** 2ml of the extract is treated with 2 ml of ammonium molybdate solution and 2 ml of con.Hno3	Mild yellow appearance.	Phosphate mildly present.
4.	**Test for Carbonate** 2 ml of the extract is treated with 2 ml magnesium sulphate solution.	No cloudy appearance.	Absence of carbonate
5.	**Test for Fluoride & Oxalate** 2 ml of extract is added with dil. Acetic acid and 2 ml calcium	No cloudy	Absence of fluride

	chloride solution and heated.	appearance	and Oxalate.
6.	**Test for Nitrate** 3 drops of the extract is placed on a filter paper, on that – 2drops of acetic acid and 2 drops of Benzidine solution is placed.	No characteristic changes	Absence of borate
7.	**Test for Lead** 2 ml of the extract is added with 2 ml of potassium iodide solution.	No yellow precipitate is obtained	Absence of lead
8.	**Test for Copper** a. One pinch of substance is made into paste with con. Hcl in a watch glass and introduced into the non luminous part of the flame	No colour precipitate formed	Absence of copper.
9.	**Test for Aluminium** To the 2 ml of the extract sodium hydroxide is added in drops to excess.	No characteristic changes	Absence of aluminium
10.	**Test for Iron** a. To the 2 ml of extract add 2ml of ammonium thiocyanate solution. b. To the 2 ml of extract 2ml ammonium thiocyanate solution and 2 ml of con. HN03 is added.	Blood red colour appeared	Presence of Iron
11	**Test for Zinc**		

	To 2ml of the extract sodium hydroxide solution is added in drops to excess.	White precipitate is formed	Presence if Zinc
12	**Test for Calcium** 2ml of the extract is added with 2ml of 4% ammonium oxalate solution.	Cloudy appearance and white precipitate is obtained	Presence of calcium
13	**Test for Magnesium** To 2ml of extract sodium hydroxide solution is added in drops to excess.	White precipitate is not obtained	Presence of Magnesium
14	**Test for Ammonium** To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added.	No Brown colour obtained	Absence of ammonium

15	**Test for Sodium** 2 pinches of the substance is made into paste by using HCL and introduced into the blue flame of Bunsen burner.	Yellow colour flame appeared	Presents of sodium
16	**Test for Mercury** 2ml of the extract is treated with 2ml of sodium hydroxide solution.	No yellow precipitate is obtained	Presents of mercury
17	**Test for Arsenic** 2ml of the extract is treated with 2ml of sodium hydroxide	No brownish red precipitate is obtained	Absence of arsenic

	solution.		
III	**Miscellaneous**		
18	**Test for Starch** 2ml of extract is treated with weak iodine solution.	No blue colour developed	Presence of starch
19	**Test for Reducing Sugar** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The Colour changes are noted.	Brick red colour developed	Absence of reducing sugar

20	**Test for the Alkaloids** a. 2ml of the extract is treated with 2ml of potassium iodide solution b. 2ml of extract is treated with 2ml of picric acid	No red colour developed	Absence of alkaloid.
21	**Test for Amino Acid** 2 drops of the extract is placed on a filter paper and dried well.	No violet colour developed	Absence of amino acids
22.	**Test for Tannic Acid** 2ml of extract is teated with 2ml of ferric chloride solution.	No black precipitate is obtained	Presence of Tannic acid
23	**Test for type of Compound** 2ml of the extract is teated with 2ml of ferric chloride solution.	No colour change	Absence of oay quinole pinephrine and pyro catechol

24	**Test for Unsaturated Compound** 2ml of Biuret reagent is added to the 2ml of extract of potassium permanganate solution is added.	Potassium permanganate is not decolourised	Absence of unsaturated compound

Acute Toxicity Study

Index

1.0 MATERIALS AND METHODS

1.1 Test Drugs

The following medicine was used in the study was processed by the methods prescribed in standard text books of siddha medicines.

Rasapralya chenthuram (RPS) was prepared by the method prescribed in the text book of **Anuboga vaithya navaneetham**.

1.2 Preparation of drug for dosing

All drugs used for the study was suspended each time with 1% (w/v) solution of sodium carboxy methyl cellulose before administration.

1.3 Drugs and chemicals

Standard Drugs and fine chemicals used in these experiments were obtained from Sigma Chemicals Company, U.S.A. Other analytical grade chemicals were obtained from S.d. Fine Chemicals Ltd., Mumbai.

1.4 Experimental animals

Colony inbred animals strains of wistar rats of either sex weighing 200 - 250 g were used for the pharmacological and toxicological studies. The animals were kept under standard conditions 12:12 (day/night cycles) at 22^0C room temperature, in polypropylene cages. The animals were fed on standard pelleted diet (Hindustan Lever Pvt Ltd., Bangalore) and tap water *ad libitum*. The animals were housed for one week in polypropylene cages prior to the experiments to acclimatize to laboratory conditions. The experimental protocol was approved by the Institutional Animal Ethical Committee (IAEC).

1.5 Acute oral toxicity study

Acute oral toxicity was conducted as per the OECD guidelines (Organization of Economic Cooperation and Development) 423 (Acute Toxic Class Method). The acute toxic class method is a stepwise procedure with 3 animals of a single sex per step. Depending on the mortality and /or

moribund status of the animals, on the average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. This procedure results in the use of a minimal number of animals while allowing for acceptable data based scientific conclusion.

The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity.

1.5 Acute oral toxicity study

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The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity

Wistar albino rats of either sex weighing 200-250 g were fasted overnight, but allowed water *ad libitum*. Since the formulation is relatively non toxic in clinical practice the highest dose of 2000 mg/kg/p.o (as per OECD guidelines “Unclassified”) was used in the acute toxicity study.

The animals were observed closely for behavioral toxicity, if any by using FOB (Functional observation battery).

1.6 Repeated oral toxicity study

Repeated oral toxicity studies can be used to get additional information regarding the toxicity profile of a chemical. Repeated oral toxicity studies are defined as those studies where the chemical is administered to the animal for a period covering approximately 10% of the expected life of the animal.

Usually, the dose levels are lower than for acute studies and allow chemicals to accumulate in the body before lethality occurs, if the chemical possess this ability.

Experimental procedure

The following experimental procedure was followed to evaluate the repeated oral toxicity study of RPC.

Group I : Control animals received 1%CMC, 2 ml/kg/p.o. for 15days

Group II : Rasapralya chenduram (RPS) inCMC at the dose Level of 500mg/kg/p.o. was given to rats for 15days

Body weight, food intake and water intake was recorded at two intervals with simultaneous observation for toxic manifestation and mortality, if any. At the end of 15days treatment all the animals were sacrificed by over dosage of ether anaesthesia. Blood was collected and used for hematological studies. Section of liver, kidney, and heart were dissected out and kept in 10% formalin for histopathological studies.

1.7 Biochemical studies

Estimation of glucose

Glucose was estimated using commercial Glucose estimation kit (Span Diagnostics) by the method of Barham *et al.,* (1972) and Tenscher. *et al.,* (1971).

Aspartate aminotransferase (AST)

Aspartate aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

Alanine aminotransferase (ALT)

Alanine aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

Alkaline phosphatase (ALP)

Alkaline phosphatase was assayed using commercial ALP kit (Span Diagnostics) by the method of King (1934).

Cholestrol

Cholestrol was estimated using the commercial kit (Span diagnostics)

Urea and Uric acid

Urea and Uric acid were assayed using the commercial kit (Span Diagnostics)

1.8 Haematological studies

Erythrocyte count

Erythocyte count was estimated by Hemocytometer method of Ghai (1995).

Total Leukocyte Count (WBC)

Total Leukocyte Count was estimated by Hemocytometer method of John (1972).

Haemoglobin

Haemoglobin was estimated by method of Ghai (1995).

1.9 Histopathological studies

Animals were sacrificed at the end of repeated oral toxicity and tissues were processed for histopathological studies.

1.10 Analgesic, Antiinflammatory studies

Analgesic activity

Tail Flick method

Wistar rats of either sex (200-250g) were divided into different groups with 6 animals in each group

Group-1. Control animals received 1% CMC 10ml/Kg/po

Group 2. Test drug at the dose of 500mg/kg/po

Withdrawal of tail (Tail Flick) for noxious thermal (radiant heat) can be used for screening drugs with analgesic activity. Radiant heat can be generated by passing electrical current through nichrome wire mounted in an analgesiometer.

The base of the tail of the test rats is placed on a nicrome wire. The tail withdrawal for the radiant heat (flicking response) is taken as the end point. Normally the rats and mice withdraw their tails within 3 – 5 secs. A cutoff time of 10 – 12 secs is used to prevent damage to the tail. Any animal failing to withdraw its tail in 3-5 secs is rejected from the study.

The reaction time of test drug, standard and control are taken at intervals of 30, 60 and 120 mts. A reaction time (withdrawal time) increment of 2-5 secs more than the control animals can be considered for analgesic activity of the drug.

Anti inflammatory activity

Anti inflammatory activity was evaluated in acute model of inflammation. Wistar rats either sex weighing 200-250g were divided into different groups with 6 animals in each group

Group-1. Control group received CMC 10ml/kg/po

Group-2. Received Carrageenan (0.1% solution) and served as positive control

Group-3 Received test drug (RPS) at the dose of 500mg/kg/po

Group-4 received standard drug Diclofenac sodium (5mg/kg/po)

Acute model

Carrageenan induced hind paw edema

The carrageenan assay procedure was carried out according to the method of Wintar *et al.* (1962). Edema was induced by injecting 0.1 ml of 1% solution of carrageenan in saline into the plantar aponeurosis of the left hind paw of the rats. The extracts, reference drug and the control vehicle (distilled water) were administered 60 min prior to the injection of the carrageenan. The volumes of edema of the injected and contra lateral paws were measured at +1, 3 and 5 hrs after induction of inflammation using a plethysmometer (Bhatt *et al*., 1977) and percentage of anti-inflammatory activity was calculated.

1.11 In Vivo Antioxidant study

Samples of serum collected from rats treated with test drugs were assayed for GSH (Moron *et al* , 1979) and LPO (Yagi, 1976) and the results were compared with control group.

2.0 Results

2.1 Preliminary basic, acidic radicals and phytochemical studies

The qualitative chemical analysis and acidic, basic radicals assay of the drugs showed the presence of phytoconstituents and minerals as depicted in (Table 1).

2.2 Acute oral toxicity study:

RPS at the dose of 2000mg/kg/po did not exhibit any mortality in rats. As per OECD 423 guidelines the dose is said to be “Unclassified” under the toxicity scale. Hence further study with higher doses was not executed

2.3 Repeated oral toxicity for 15 days:

Test drug RPS at the dose of 500 mg/kg/po when administered orally for 15 days in rats did not exhibit toxicity in haematopoeitic system and liver. However the drug exhibited an increase in uric acid level after the administration for 15 days (Tables 2 and 3)

2.4 Histopathological study:

RPS at the dose of 500 mg/kg/po daily administered for 15days did not show evidence of pathological lesions in the tissues tested (Plate 1).

2.5 Analgesic, Antiinflammatory studies:

RPS at the dose of 500 mg/kg/p.o showed significant analgesic activity in rats(Table-3). RPS also exhibited significant anti-inflammatory activity in carrageenan induced hind paw edema (acute inflammation model) in rats. The results of present study was comparable to that of the standard NSAID Diclofenac sodium (5 mg/kg/p.o) (Table4).

2.6 Antioxidant activity:

At the end of 15 days repeated oral toxicity study when the plasma of drug treated animals was examined for GSH activity, the level of GSH activity was increased significantly ($p>0.001$) in test groups. On the other hand there was no difference in the LPO activity of treated animals when compared to control(Table-5)

Discussion

The siddha formulation Rasapralya chenduram (RPC) was tested for its reverse pharmacological and toxicological profiles in the experimental rats. The drug did not exhibit mortality at the highest dose of 2000 mg/kg/p.o, As per OECD 423 guidelines the dose is said to be "Unclassified" under the toxicity scale. Hence further study with higher doses was not executed

The preliminary phytochemical study revealed the absence of alkaloids and saponins in the test drug. The test drug answered for the presence of calcium,ferrous iron,sulphate,chloride,carbonate and absence for alkaloids and saponins.Repeated oral toxicity study conducted for15days with the drug did not exhibit significant changes in RBC count and in Hb%.The biochemical markers of liver function tests did not show evidence of liver toxicity..However ther uric acid level showed an upward trend that may be due to the probable toxic effect on the kidney functioin after the drug treatment There was no significant changes in Haematological parameters like blood Cholesterol, body weight, food, water intake and behavioural parameters..

The test drug exhibited significant analgesic, and anti-inflammatory activity in acute experimental inflammatory conditions in rats.. A significant anti-inflammatory activity was obtained with the test drug in carrageenan induced hind paw edema model. The test drug showed maximum anti-inflammatory activity at the end of 4^{th} hour after carrageenan challenge. The result of test drug (500 mg/kg/p.o) was comparable to that of Diclofenac Sodium (5 mg/kg/p.o). Since the maximum anti-inflammatory activity (reduction in the paw edema volume) was observed at the end of 4^{th} hour, the mechanism of anti-inflammatory activity of test drug may be attributed for its inhibitory activity on cyclooxygenase (COX) enzymes.

The present study on the reverse pharmacological and toxicological profiles of the drug may be summarized as follows:

1. The drug is safe even at the highest dose of 2000mg/kg/po. According to OECD classification for toxicity scale this drug comes under the "unclassified" scale.

However caution should be taken to prevent overdosing with the drug since it contains mercury

2. Though the repeated drug treatment for 15 days exhibited alteration in theuric acid level, the test drug did not exhibit any alterations in the normal architecture of the kidney at the end of 15 days. Since there is no report on the kidney function tests done in clinical study, it can be reasonably assumed that the drug is safe for humans unless and otherwise proved with clinical data generated on kidney function
3. The formulation exhibited significant antioxidant activity and no change in the LPO activity in rats treated for 15 days

Table 1

Effect of Siddha Formulations(RPC) on Haematological parameters after 15 days repeated oral dosing (500 mg/kg)

Groups	Hb (gm/100ml)	RBC (millions/cu. mm)	WBC (cells/cu.mm)	Differential leucocyte count (%)		
				Lympho cytes	Mono cytes	Granulo cytes
Normal	14.00. ± 0.34	5.18 ± 0.35 ^{ns}	6500± 491.44	76.06 ± 3.89 ^{ns}	5.30 ± 1.04	16.50 ± 4.27
RPS (500mg/ kg. p.o.,)	14.50 ± 0.60^{ns}	5.28 ± 0.70 ^{ns}	6686.66 ± 3.323^{ns}	76.67 ± 3.32 ^{ns}	6.16 ± 1.7 ^{ns}	18.66 ± 3.44 ^{ns}

N=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test
Ns – non significant when compared to control groups.

Table 2

Effect of Siddha formulation (RPC) on Biochemical markers of liver and kidney after 15 days repeated oral dosing (50 mg/kg/po) in rats

Groups	AST (IU/L)	ALT (IU/L)	Cholestrol (mg/dl)	Creatinin (mg/dl)	Urea (mg/100ml)	Uric acid (mg/dl)
Normal	70.24±0.23	30.70 ± 0.81	45.84 ± 0.58	1.26± 0.64	13.86 ± 0.37	1.83 ± 0.58

RPS (500mg/kg.p.o.,)	76.45±5.92 ns	35.43 ± 2.67 ns	39.6 ± 0.92 ns	2.15 ±0.72 ns	14.60 ± 0.69 ns	4.26± 0.84 ***

N=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test
Ns – non significant when compared to control groups
***P<0.001 as compared with control

Table 3

Analgesic activity of (RPC) using Tail flick Method:

Groups	Paw licking response (Sec)			
	0 min (Sec)	30 min (Sec)	60 min (Sec)	120 min (Sec)
Control	2.266± 0.396	2.293± 0.96	2.46±0.367	2.582± 0.653
RPS (500mg/kg.p.o.,)	2.811 ± 0.361	3.427 ± 0.450 ***	4.921± 0.077 ***	2.762± 1.213 ns

n=6, Values are expressed as mean ± S.D using followed by paired T – test
***P<0.001 as compared with control. ns - Non significant as compared with control;

Table 4

Anti inflammatory activity of RPC in carrageenan induced hind paw edeama in rats:

Groups	Paw volume (ml) by mercury Displacement at regular interval of time					
	0min	30min	60min	120min	240min	4th hrs
Control	1.483 ± 0.1915	1.766 ± 0.1366	2.06 ± 5.164	2.195 ± 7.7619	2.33 ± 0.136	2.23 ± 0.4612
RPS (500mg/kg. p.o.,)	1.356 ± 0.1402 ns	1.358 ± 0.213 ns	1.536 ± 0.404 ns	2.168 ± 0.302 ns	2.43 ± 0.326 ns	1.43 ± 0.133 ***
Standard (Dic.Sodium 5 mg/kg/po)	0.835 ± 0.065 ns	1.315 ± 0.069 ns	1.128 ± 0.049 **	1.011 ± 0.056 ***	0.896 ± 0.048 ***	0. 85 ± 0.054 ***

n=6; Values are expressed as mean ± S.D followed by paired T – test.
ns - Non significant as compared with control;

P< 0.001 (***),P <0.003(**)as compared with control.**Table 6:**

Anti oxidant activity of Siddha Formulation (RPC) after 15 days repeated oral dosing (500 mg/kg)

Groups	LPO	GSH
Control	0.60 ± 1.37	45.48 ± 2.31
RPS (500mg/kg. p.o.,)	0.70 ± 4.90^{ns}	80.65 ± 0.35***

N=6; Values are expressed as mean ± S.D followed by Student T- Test.
***P<0.001 as compared with control. ns - Non significant as compared with control;

RASAPRALAYACHENTHURAM

ANTIARTHRITIC ACTIVITY

Formaldehyde-induced arthritis in rats

The animals were divided into three groups of five rats. A sub plantar injection of 0.1 ml of 2% (v/v) formaldehyde was administered to the right hind paw on the first and third days of the experiment. The test drug (200 mg/kg body wt.), nalfon (standard) or vehicle (1 ml/kg body wt.) were administered orally once daily for 10 days. The paw volumes were measured using plethysmometer, before the formaldehyde injection (day 0) and repeated every day, for 10 days.

EFFECT OF RASAPRALAYACHENTHURAM ON FORMALDEHYDE INDUCED ARTHRITIS IN HIND PAW OF RATS

Groups	Changes in paw size (cm)		
	1 day	5 days	10 days
Arthritis	0.40 ± 0.03	0.73 ± 0.05	0.67 ± 0.07
Arthritis +drug (200mg/kg)	0.41 ± 0.03	0.58 ± 0.04*	0.49 ± 0.05*
Arthritis + Nalfon (standard)	0.42 ± 0.02	0.42 ± 0.03**	0.31 ± 0.01**

Values are expressed as mean ± SEM of 5 rats. **P<0.01; *P<0.05 Vs arthritis group.

Interference: The drug (Rasapralaya Chenthuram) showed moderate antiarthritic effect.

NAVANATHA SIDDHAR THYLAM

ACUTE ANTI-INFLAMMATORY ACTIVITY

EFFECT OF NAVANATHA SIDDHAR THYLAM ON CARRAGEENAN- INDUCED HIND PAW EDEMA IN RATS

Drug	**Paw volume (ml)**		**Inhibition (%)**
	1hr	3hr	
Control (water)	2.22 ± 0.2	5.42 ± 0.4	-
Navanatha siddhar thylam	2.65 ± 0.1	3.28 ± 0.2**	80.3
Diclofenac sodium gel (standard)	2.20 ± 0.2	2.01 ± 0.2**	93.7

Values are expressed as mean ± SEM of 5 rats. **P<0.01Vs control group.

Interference: The drug (Navanatha Siddhar Thylam) showed significant anti-inflammatory effect when applied externally.

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To

Dr.S.Sunitha.

In Vitro antimicrobial activity of Rasapralaya chenthuram as screened against bacteria and Yeast strains. The results are depicted in table. In 50, 100 and 150 µl/ disc concentration of RPC were exhibited high antimicrobial activity in streptococcus mutans, S. aureus, Klebsilla and Pseudononas when compared to standard drugs ciprofloxacin.

Organism	**Standard drug Ciprofloxacin 50 mg/disc**	**TEST DRUG (µl/disc)**		
		Zone of Inhibition in mm		
		50 µl	**100 µl**	**150 µl**
Strepto.mutans	29.0 mm	13.0 mm	15.0 mm	19.0 mm
Klebsilla	29.0 mm	14.0 mm	16.0 mm	18.0 mm
Staphylo.aureus	33.0 mm	21.0 mm	27.0 mm	30.0 mm
Pseudomonas aeroginosa	29.0 mm	14.0 mm	17.0 mm	19.0 mm

ANTIMICROBIAL ACTIVITY OF RASAPRALAYA CHENTHURAM

The tested microorganisms

;

The strain used in this work was *Staphylococcus aureus, Streptococcus mutans, Pseudomonas aeroginos and Klebsiella* were provided from the Culture Stock. The bacteria was maintained by weekly transfer in a chemically defined medium and tryptic soy broth (TSB) and distributed in 5ml volumes in screw-capped tubes. Cells were grown at 37°C for 48h and cultures were kept at 4°C.

Method:

The antibacterial action of the *RPC* was tested on the test bacteria using the agar-gel diffusion inhibition test. In the agar-gel diffusion inhibition test 0.2ml of a 24h broth culture (10^6cfu/ml) of the bacteria was aseptically introduced and evenly spread using bent sterile glass rod on the surface of gelled sterile Mueller-Hinton agar plates. Four wells of about 4.0mm diameter were aseptically punched on agar-plate using a sterile cork borer allowing at least 30mm between adjacent wells and between peripheral wells and the edge of the petri dish. Fixed volumes (0.1ml) of the *RPC* in different concentration like 50 µl, 100 µl, 150 µl were then introduced into the wells in the plates. A control well was loaded with 0.1ml of the solvent. The plates incubated at 37°C for 24h for the test bacteria. The plates were duplicated in all the experiments.

Results and discussion:

The *RPC* exhibited highly sensitive against staphylococcus aureus, Streptococcus mutans, Pseudomonas and Klebsilla microorganisms used in the study from the zone of inhibition produced by the *RPC.* None of the negative control exhibited anti microbial activity but when it compared with Ciprofloxacin it doesn't exhibited highly sensitive. The solvent used for solubilisation of drug had no anti microbial activity.

Thus it is confirmed that the *RPC* exhibited antimicrobial activity against above four organisms. Higher diameter zones of inhibition (30 mm) was obtained on the test organism Staphylococcus aureus.

References:

1. Sastry, V.M.V.S.; Rao, G.R.K. Antibacterial substances from marine algae: successive extraction using benzene, chloroform and methanol. *Bot. Marina*, 37: 357-360, 1994.

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OVERALL IMPROVEMENT TABLE FOR OUT PATIENTS:

S.No	Op. No	Age/Sex	Date of Treatment Starting	End of The Treatment	Improvement	Duration of illness
1.	A.L.9173	37/F	09.08.08	02.09.08	Good	3 month
2.	A.L.8950	31/F	09.08.08	02.09.08	Good	3 month
3.	A.m.48	55/F	13.08.08	04.09.08	Good	> 1 yr
4.	A.m.732	29/F	18.08.08	08.09.09	Mild	> 1 yr
5.	A.L.7238	42/F	11.09.08	02.10.08	Mild	> 6 month
6.	A.K.271	39/F	17.08.08	08.10.08	Good	3 month
7.	W.368	44/F	20.08.08	11.09.08	Good	1 yr
8.	A.m.22	38/F	13.08.08	04.09.08	Good	1 1/2 yr
9.	A.m.777	33/F	17.08.08	09.09.09	Good	> 6 month
10.	A.m.825	29/F	17.08.08	09.09.08	Good	> 6 month
11.	A.m.1838	38/F	10.9.08	02.10.08	Moderate	8 month
12.	A.m.4364	46/F	09.09.08	29.09.08	Moderate	3 month
13.	O.5893	32/F	11.09.08	03.10.08	Moderate	6 month
14.	O.2447	40/F	04.09.08	24.09.08	Good	> 3 month
15.	A.N.1856	42/F	13.10.08	04.10.08	Good	1 1/2 yr
16.	A.N.1846	55/M	04.10.08	25.10.08	Moderate	1 yr
17.	A.m.191	48/M	14.08.08	05.09.08	Good	> 6 month
18.	A.N.1150	38/F	10.10.08	01.11.08	Moderate	4 month
19.	A.N.4353	45/F	11.10.08	02.11.08	Good	5 month
20.	A.N.5285	32/F	22.10.08	13.11.08	Mild	8 month

OVERALL IMPROVEMENT FOR IN PATIENT DEPARTMENT:

S.No	IP. No	Age/Sex	Date of Admission	Date of Discharge	Treatment days in IP	Improvement	Duration of illness
1.	1074	34/F	08.08.08	29.08.08	20	Good	< 1 yr
2.	1103	30/F	21.08.08	12.09.08	20	Mild	< 1 yr
3.	1095	43/F	19.08.08	11.09.08	20	Moderate	> 1 yr
4.	1097	40/F	20.08.08	12.09.08	20	Good	> 5 yr
5.	1631	25/M	16.09.08	29.09.08	12	Good	< 3month
6.	1627	47/M	16.09.08	04.10.08	18	Good	< 1 yr
7.	1675	52/M	04.10.08	13.10.08	08	Good	> 6 month
8.	1195	55/F	29.09.08	10.10.08	10	Good	> 6 month
9.	1628	32/M	16.09.08	14.10.08	28	Moderate	> 4 yr
10.	1202	50/F	04.10.08	24.10.08	20	Moderate	> 2 yr
11.	1216	36/F	10.10.08	19.10.08	08	Moderate	> 3 yr
12.	1221	48/F	15.10.08	24.10.08	08	Good	> 1 yr
13.	1622	30/M	15.09.08	22.09.08	07	Moderate	2 ½ yr
14.	1224	36/F	16.10.08	31.10.08	15	Moderate	> 4yr
15.	1205	55/F	06.10.08	31.10.08	24	Moderate	> 1 yr
16.	1211	50/F	07.10.08	31.10.08	22	Mild	< 5 month
17.	1212	36/F	09.10.08	31.10.08	20	Mild	> 5 yr
18.	1697	36/F	13.10.08	31.10.08	18	Good	1 yr
19.	1289	40/F	18.11.08	08.12.08	19	Good	> 2 yr
20.	1290	38/F	18.11.08	10.12.08	20	Mild	2 yr

Ayothidhasar Pandithar Hospital, National Institute of Siddha, Tambaram sanatorium.

IN PATIENTS SEROLOGICAL IMPROVEMENT REPORT:

S.NO	IP .NO	RA factor		CRP	
		Before treatment	**After treatment**	**Before treatment**	**After treatment**
1.	1103	Pos	Pos	Pos	-
2.	1095	Pos	Pos	Pos	Neg
3.	1097	Pos	Pos	Pos	Pos
4.	1631	Neg	Neg	Pos	Pos
5.	1195	Pos	Neg	Pos	Pos
6.	1202	Pos	Pos	Pos	Neg
7.	1216	Neg	Neg	Pos	Neg
8.	1221	Neg	Neg	Pos	Pos
9.	1224	Pos	Pos	Pos	Pos
10.	1205	Pos	Neg	Pos	Pos
11.	1211	Pos	Pos	Pos	Pos
12.	1212	Neg	Neg	Pos	Pos
13.	1697	Pos	Neg	Neg	Neg
14.	1622	Neg	Neg	Pos	Pos
15.	1289	Pos	Pos	Pos	Pos
16.	1290	Pos	Pos	Neg	Neg

Ayothidhasar Pandithar Hospital, National Institute of Siddha, Tambaram sanatorium.

OUT PATIENTS SEROLOGICAL IMPROVEMENT REPORT:

S.NO	OP .NO	RA factor		CRP	
		Before treatment	After treatment	Before treatment	After treatment
1.	AL.9173	Pos	Pos	Neg	Neg
2.	Am.732	Pos	Pos	Pos	Pos
3.	AL.7238	Pos	Pos	Neg	Neg
4.	W.368	Pos	Pos	Pos	Neg
5.	Am.22	Pos	Pos	Neg	-
6.	A.m.825	Pos	Pos	Pos	Neg
7.	Am.1838	Pos	Pos	Neg	Neg
8.	1846	Pos	Pos	Pos	Neg
9.	AN.5285	Pos	Pos	Neg	Neg
10.	Am.777	Neg	Neg	Pos	Neg
11.	O.5893	Neg	Neg	Pos	Pos

TABLE ILLUSTRATES THE IMPROVEMENT OF HEAMOGLOBIN & ESR:

IN PATIENTS:

S. NO	**IP.NO**	**Haemoglobin**		**ESR**			
		Before treatment	**After treatment**	**Before treatment**		**After treatment**	
				½ hour	**1 hour**	**½ hour**	**1 hour**
1	1074	10.8	12.1	18	25	04	12
2	1103	09.0	09.7	22	46	26	50
3	1095	09.7	08.2	20	44	08	16
4	1097	08.2	08.2	08	16	20	40
5	1631	11.1	13.7	14	30	11	22
6	1627	09.7	10.2	14	28	6	18
7	1675	09.6	13.1	18	36	12	24
8	1195	11.5	12.2	16	32	08	16
9	1628	13.1	15.5	06	12	06	12
10	1202	09.4	11.0	18	36	12	24
11	1216	10.8	12.0	30	60	30	60
12	1221	08.5	08.0	10	20	06	14
13	1224	12.0	12.2	26	52	12	24
14	1205	11.3	13.5	10	22	20	40
15	1211	08.5	10.5	120	200	70	152
16	1697	14.0	11.1	16	32	20	40
17	1622	08.2	09.0	42	90	28	60
18	1289	09.4	10.0	60	124	45	92
19	1290	12.6	09.0	02	04	07	14
20	1212	09.4	09.5	15	30	10	20

TABLE ILLUSTRATES THE IMPROVEMENT OF HEAMOGLOBIN & ESR:

OUT PATIENTS:

S. NO	OP. NO	Haemoglobin		ESR			
		Before treatment	After treatment	Before treatment		After treatment	
				½ hour	1 hour	½ hour	1 hour
1	AL.9173	12.1	10.6	04	10	06	12
2	AL.8950	09.2	09.2	15	30	08	16
3	Am.48	08.7	10.6	10	22	04	08
4	Am.191	11.2	10.7	12	24	08	16
5	Am.732	08.7	08.2	12	25	06	12
6	AL.7238	06.8	08.2	50	100	20	40
7	Ak.271	09.7	15.0	48	82	04	08
8	W.368	09.7	10.7	25	50	10	20
9	Am.22	12.1	10.2	08	16	20	40
10	Am.777	10.2	10.8	30	60	20	40
11	Am.825	12.2	11.6	30	60	35	72
12	Am.1838	10.7	11.0	16	32	08	16
13	Am.4364	11.0	11.2	22	46	04	08
14	O.5893	09.7	10.0	15	30	30	60
15	O.2447	10.6	12.1	24	48	14	28
16	AN.1856	11.6	11.8	08	16	04	08
17	1846	12.6	13.0	22	44	12	28
18	AN.1150	13.6	13.4	14	28	12	24
19	AN.4353	10.3	11.2	16	32	06	12
20	AN.5285	14.5	14.5	30	60	20	40

Case Sheet Proforma

NATIONAL INSTITUTE OF SIDDHA

AYODHIDOSS PANDITHAR HOSPITAL, CHENNAI-47.

POST GRADUATE DEPARTMENT OF POTHU MARUTHUVAM

AN OPEN TRIAL OF SIDDHA DRUGS RASAPRALAYA CHENTHURAM AND NAVANATHA SIDDHAR THYLAM FOR THE TREATMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS

BY

Dr.S.SUNITHA

FORM I – SELECTION PROFORMA/CASE SHEET

1. OP/ IP No: _____ **2. BED NO**: _____ **3. SI.NO**: _____

4. NAME: _____

5. AGE (YEARS) ☐☐ 6. **GENDER:** M ☐ F ☐

7. OCCUPATION: _____

8. INCOME: _____

9. ADDRESS: _____
_____
_____
_____

10. DATE OF ADMISSION:

11. DATE OF DISCHARGE:

12. COMPLAINTS AND DURATION: _____
_____
_____
_____

13. HISTORY OF PRESENT ILLNESS: _____
_____
_____
_____

14. PAST HISTORY: _____
_____
_____
_____

15. MENSTRUAL HISTORY (If applicable): _____
_____
_____

16. Family history: 1. No ☐ 2. Yes ☐ If any: ----------

17. Socio economical status: 1.Low ☐ 2. Middle ☐ 3. Upper ☐

18. Habits:

	1. Yes	2. No
1. Betel nut chewer:	☐	☐
2. Alcoholic:	☐	☐
3. Smoker:	☐	☐
4. Drug addiction:	☐	☐
5. Food habits: V ☐ NV ☐ M ☐		

19. GENERAL EXAMINATION:

1. Body weight (kg): ☐☐☐
2. Temperature (°F): ☐☐☐ . ☐
3. Pulse rate / minute: ☐☐
4. Heart rate / minute: ☐☐
5. Respiratory rate / minute: ☐☐
6. Blood pressure (mmHg): ☐☐☐ / ☐☐☐

	1. Yes	2. No
7. Pallor:	☐	☐
8. Jaundice:	☐	☐
9. Cyanosis:	☐	☐
10. Lymphadenopathy:	☐	☐
11. Pedal edema:	☐	☐

12. Clubbing: ☐ ☐

13. Jugular venous pulsation: ☐ ☐

20. VITAL ORGANS EXAMINATION:

	1. Normal	2. Affected	
1. Heart	☐	☐	_____
2. Lungs	☐	☐	_____
3. Brain	☐	☐	_____
4. Liver	☐	☐	_____
5. Kidney	☐	☐	_____
5. Spleen	☐	☐	_____
6. Stomach	☐	☐	_____

21. CLINICAL EXAMINATION:

I. INSPECTION:

1. Attitude:		Normal ☐	Affected ☐	
		Present	Absent	
2. Muscle spasm:		☐	☐	
3. Muscle wasting of the upper limbs:		☐	☐	
4. If yes,	Proximal	☐	☐	
	Distal	☐	☐	
5. Joint swelling:	Major joints	☐	☐	
	Minor joints	☐	☐	
6. Skin over the joints:	Normal	☐	Reddish ☐	

7. Muscle wasting of the lower limbs: ☐ ☐

8. Nodules: ☐ ☐

9. Deformities:

1. Swan neck deformity:	1.Yes	☐	2. No	☐
2. Button hole deformity:	1. Yes	☐	2. No	☐
3. Z Shaped thumb	1. Yes	☐	2. No	☐
4. Ulnar deviation of hand	1. Yes	☐	2. No	☐
5. Ulnar deviation of foot	1. Yes	☐	2. No	☐
6. Hallus valgus	1. Yes	☐	2. No	☐

II. PALPATION:

	Present	Absent
1. Tenderness	☐	☐
2. Muscle spasm	☐	☐
3. Local heat	☐	☐
4. Local Lymphadenopathy:	☐	☐
5. Pitting edema:	☐	☐
6. Joint stiffness	☐	☐
7. Nodules**:**	☐	☐

III. MOVEMENTS:

1. Pain:

i. Onset:	Sudden	☐	Gradual	☐
ii. Early morning stiffness:	Present	☐	Absent	☐

iii. Nature of pain: Mild ☐ Moderate ☐ Severe ☐

iv. Aggravating factor – Movement: Yes ☐ No ☐

v. Relieving factor – Rest: Yes ☐ No ☐

vi. Stiffness Yes ☐ No ☐

vii. Tenderness: Yes ☐ No ☐

2. Restriction:

	Fully	Partial	No
A. Neck :	☐	☐	☐
B. Shoulder joints:	☐	☐	☐
C. Elbow joints:	☐	☐	☐
D. Knee joints:	☐	☐	☐
E. Ankle joints:	☐	☐	☐
F. Phalangeal joints:	☐	☐	☐
I. Hip joints:	☐	☐	☐

3. Grading of function:

Grade I ☐ Grade II ☐ Grade III ☐ Grade IV ☐

4. Excess mobility: Yes ☐ No ☐

22. CLINICAL FEATURES:

	Yes	No
1. Arthritis and soft tissue swelling of three or more joints present for at least 6 weeks	☐	☐
2. Arthritis of hand joints present for at least 6 weeks	☐	☐
3. Morning stiffness > 1 hr	☐	☐
4. Symmetrical arthritis	☐	☐

5. Restricted movements ☐ ☐

6. Spindled appearance of fingers ☐ ☐

7. Anemia ☐ ☐

8. Anorexia ☐ ☐

9. Low grade fever ☐ ☐

10. Sub cutaneous nodules in specific places ☐ ☐

11. Broadening of the forefoot ☐ ☐

23. AUTONOMIC NERVOUS SYSTEM:

	Normal	Affected
1. Bladder	☐	☐
2. Bowel	☐	☐

24. SIDDHA SYSTEM OF EXAMINATON:

1. Nilam:

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4.Neithal ☐ 5. Palai ☐

2. Kaala Iyalbu:

1. Kaarkaalam ☐ 2. Koothirkaalam ☐ 3. Munpanikaalam ☐

4. Pinpanikaalam ☐ 5. Ilavenilkaalam ☐ 6. Muduvenirkaalam ☐

3.Yaakkai:

1. Vali ☐ 2.Azhal ☐ 3. Iyyam ☐

4. Valiazhal ☐ 5.Valiiyyam ☐ 6. Azhalvali ☐

7. Azhaliyam ☐ 8. Iyavali ☐ 9. Iyaazhal ☐

4. **Gunam:**

1. Sathuva gunam ☐ 2. Rajo gunam ☐ 3. Thamo gunam ☐

5.Poripulangal:

	1. Normal	2. Affected
1. Mei	☐	☐
2. Vaai	☐	☐
3. Kan	☐	☐
4. Mookku	☐	☐
5. Sevi	☐	☐

6. Kanmenthirium:

1. Kai	☐	☐
2. Kaal	☐	☐
3. Vaai	☐	☐
4. Eruvai	☐	☐
5. Karuvaai	☐	☐

7. Uyir Thathukkal:

A.Vali:

	1. Normal	2. Affected
1. Pranan	☐	☐
2. Abanan	☐	☐
3. Samanan	☐	☐
4. Udhanan	☐	☐
5. Viyanan	☐	☐
6. Nagan	☐	☐
7. Koorman	☐	☐
8. Kirukaran	☐	☐

9. Devathaththan	☐	☐
10. Thananjeyan	☐	☐

B. Azhal:

	1. Normal	2. Affected
1. Anal pittham	☐	☐
2. Prasaga pittham	☐	☐
3. Ranjaga pittham	☐	☐
4. Aalosaga pittham	☐	☐
5. Sathaga pittham	☐	☐

C. Iyam:

	1. Normal	2. Affected
1. Avalambagam	☐	☐
2. Kilethagam	☐	☐
3. Pothagam	☐	☐
4. Tharpagam	☐	☐
5. Santhigam	☐	☐

8. Udal Thathukkal:

	1. Normal	2. Affected
1. Saaram	☐	☐
2. Senneer	☐	☐
3. Oon	☐	☐
4. Kozhuppu	☐	☐
5. Enbu	☐	☐
6. Moolai	☐	☐
7. Suronitham or Sukkilam	☐	☐

9. **Envagai Thervukal:**

	1. Normal	2. Affected
1. Naa	☐	☐
2. Niram	☐	☐
3. Mozhi	☐	☐
4. Vizhi	☐	☐

5.Malam**:**	1. Normal	2. Affected
i. Niram	☐	☐
ii.Nurai	☐	☐
iii. Thanmai:	Erugal ☐	Elagal ☐
iv. Kirumi:	☐	☐

6. Moothiram:

A. Neerkuri:

i. Niram	☐	☐	_____
ii. Eadai	☐	☐	_____
iii. Manam	☐	☐	_____
iv. Nurai	☐	☐	_____
v. Enjal	☐	☐	_____

B.Neikuri: 1.Vatha neer ☐ 2. Pitha neer ☐ 3. Kaba neer ☐

7. Naadi:

8. Sparisam: 1. Mithaveppam ☐ 2. Miguveppam ☐ 3. Thatpam ☐

25. INVESTIGATION:
A. Blood:

1. TC (cells /cumm): ☐☐☐☐

2. DC (%): 1. P ☐☐ 2.L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

3. Hb (gms %): ☐☐ . ☐

4. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

5. Blood Sugar (R) (mg %): ☐☐☐

6. Blood Urea (mg %): ☐☐

7. Serum Creatinine (mg %): ☐☐

8. Serum Cholesterol (mg %): ☐☐☐

9. Triglycerides (mg %) ☐☐☐

10. Total Bilirubin ☐☐☐

11. Direct Bilirubin ☐☐☐

12. Indirect Bilirubin ☐☐☐

10. SGOT ☐☐☐

11. SGPT ☐☐☐

12. Alkaline phosphatase ☐☐☐

13. ASO titer 1. Positive ☐ 2. Negative ☐

14. CRP 1. Positive ☐ 2. Negative ☐

15. RA Factor 1. Positive ☐ 2. Negative ☐

16. VDRL 1. Positive ☐ 2. Negative ☐

B. Urine:

1. Albumin: 1. Present ☐ 2. Absent ☐

2. Sugar: 1. Present ☐ 2. Absent ☐

3. Deposit:	1. Yes	2. No
i. Pus cells	☐	☐
ii. Epithelial cells	☐	☐
iii. RBC	☐	☐
iv. Crystals	☐	☐

C. Motion:

	1. Yes	2.No
i. Ova	☐	☐
ii. Cyst	☐	☐
iii. Occult blood	☐	☐

26. INCLUSION CRITERIA:

	Yes	No
1. Age between 25 to 55 yrs	☐	☐
2. Arthritis of three or more joints	☐	☐
3. Arthritis of hand joints:	☐	☐
4. Morning stiffness > 1 hr	☐	☐
5. Symmetrical arthritis	☐	☐
6. Restricted movements	☐	☐
7. Sub cutaneous nodules in specific places	☐	☐

8. Spindled appearance of fingers ☐ ☐

9. Fever ☐ ☐

10. Anemia ☐ ☐

11. Anorexia ☐ ☐

12. Broadening of the forefoot ☐ ☐

13. RA Factor positive ☐ ☐

27. EXCLUSION CRITERIA:

	Yes	**No**
1. Cardiac disease	☐	☐
2. Hypertension	☐	☐
3. Use of narcotics	☐	☐
4. Pregnancy	☐	☐
5. Lactation	☐	☐
6. Other joint diseases	☐	☐
7. History of trauma	☐	☐
8. Diabetic mellitus	☐	☐
9. Neurological disorder	☐	☐

28. ADMITTED TO TRIAL: 1.Yes 2. No

29. If yes

1. I.P / O.P 1. I.P ☐ 2. O.P ☐

2. IP/ OP No ☐☐☐☐☐☐

30. Drug issued for OP/ IP patient

Rasapralaya chenthuram (mg): | | | |

Thirikaduku chooranam (g): | | |

Navanatha siddhar thylam (ml): | | | |

Station:

Date:

Signature of Medical Officer:

Signature of HOD:

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 47.

POST GRADUATE DEPARTMENT OF POTHU MARUTHUVAM

AN OPEN TRIAL OF SIDDHA DRUGS RASAPRALAYA CHENTHURAM AND NAVANATHA SIDDHAR THYLAM FOR THE TREATMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

BY

Dr.S.SUNITHA

FORM II – ASSESSMENT PROFORMA

1. O.P/ I.P.No: _____ **2. Bed No:** _____ **3. S.I.No:** _____

4. Name: _____ **5. Age (years):** ☐☐ **6. Sex: M** ☐ **F** ☐

7. Address: _____
_____
_____

8. Occupation: _____

9. Date of admission:

10. Date of discharge:

I. INSPECTION:

	Present	Absent
1. Attitude:	☐	☐
2. Muscular spasm	☐	☐
3. Muscle wasting – proximal	☐	☐
4. Muscle wasting – distal	☐	☐
5. Major joint swelling	☐	☐
6. Minor joint swelling	☐	☐
7. Nodules	☐	☐
8. Deformity	☐	☐
9. Skin over the joints	Normal ☐	Reddish ☐

II. PALPATION:

	Present	Absent
1. Swelling	☐	☐
2. Tenderness	☐	☐
3. Joint stiffness	☐	☐
4. Muscle wasting	☐	☐
5. Local heat	☐	☐
6. Local lympadenopathy	☐	☐
7. Pitting edema	☐	☐
8. Nodules	☐	☐

III. MOVEMENTS:

1. Restriction of joint movements:	Yes	☐	No	☐
i. Neck	Full	☐	Partial	☐
ii. Shoulder joints	Full	☐	Partial	☐
iii. Elbow joints	Full	☐	Partial	☐
iv. Knee joints	Full	☐	Partial	☐
v. Ankle joints	Full	☐	Partial	☐
vi. Hip joints	Full	☐	Partial	☐
vii. Minor joints	Full	☐	Partial	☐
2. Excess mobility:	Yes	☐	No	☐
3. Pain	Yes	☐	No	☐

IV. PAIN:

i. Onset	Sudden	☐	Gradual	☐		
ii. Early morning stiffness	Present	☐	Absent	☐		
iii. Nature of pain	Mild	☐	Moderate	☐	Severe	☐
iv. Aggravating factor – Movements	Yes	☐	No	☐		
v. Relieving factor – Rest	Yes	☐	No	☐		
vi. Stiffness	Yes	☐	No	☐		
v. Tenderness	Yes	☐	No	☐		

V. CLINICAL ASSESSMENTS:

	Yes	No
1. Arthritis and soft tissue swelling of three or more joints at least 6 weeks	☐	☐
2. Arthritis of hand joints at least 6 weeks	☐	☐
3. Morning stiffness > 1 hr	☐	☐
4. Symmetrical arthritis	☐	☐
5. Restricted movements	☐	☐
6. Spindled appearance of fingers	☐	☐
7. Rheumatoid nodules	☐	☐
8. Fever	☐	☐
9. Anemia	☐	☐
10. Anorexia	☐	☐
11. Broadening of forefoot	☐	☐

8. RESULT:

1. Good improvement ☐ 2. Mild improvement ☐ 3. Moderate improvement ☐

4. No improvement ☐

9. INVESTIGATION:

A. BLOOD:

1. TC (cells /cumm): ☐☐☐☐

2. DC (%): 1. P ☐☐ 2.L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

3. Hb (gms %): ☐☐ ☐

4. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

5. Blood Sugar (R) (mg %): ☐☐☐

6. Blood Urea (mg %): ☐☐

7. Serum Creatinine (mg %): ☐☐

8. Serum Cholesterol (mg %): ☐☐☐

9. Triglycerides (mg %) ☐☐☐

10. Serum total billirubin ☐☐☐

11. Direct billirubin ☐☐☐

12. Indirect billirubin ☐☐☐

13. SGOT ☐☐☐

14. SGPT ☐☐☐

15. Alkaline phosphatase ☐☐☐

16. Total protein ☐☐☐

17. Albumin ☐☐☐

18. Globulin ☐☐☐

19. CRP 1. Positive ☐ 2. Negative ☐

20. RA Factor 1. Positive ☐ 2. Negative ☐

B. URINE:

1. Albumin: Present ☐ Nil ☐

2. Sugar: Present ☐ Nil ☐

3. Deposit: 1. Yes 2. No

i. Pus cells ☐ ☐

ii. Epithelial cells ☐ ☐

iii. RBC ☐ ☐

iv. Crystals ☐ ☐

13. Date: _____

14. Station: _____ **15. Signature of Doctor**: _____

16. Signature of HOD: _____

LAB INVESTIGATIONS CHART

S.NO	INVESTIGATIONS	DATE OF ADMISSION	DATE OF DISCHARGE
I.	**BLOOD:**		
1.	TC (Cells/ Cumm)		
2.	DC (%)		
3.	ESR (mm): ½ hr & 1 hr		
4.	Hb (gm %)		
5.	Blood sugar (mg %) Fasting: Postprandial:		
6.	Serum cholesterol		
7.	Serum Trigliceride		
8.	Serum Total Bilirubin		
9.	Serum Indirect Bilirubin		
10.	Serum Direct Bilirubin		
11.	Alkaline phosphatase		
12.	SGOT		
13.	SGPT		
14.	Serum Creatinine		
15.	Blood Urea		
16.	Total Protein		
17.	Albumin		
18.	Globulin		
19.	Calcium		
	Special Investigations:		
20.	ASO Titre		
21.	RA Factor (Dilution)		
22.	CRP		
II.	**URINE:**		
	Albumin Sugar Deposits: Epithelial cells: Pus cells Red blood cells: Cast/ Crystals:		
III.	**NEIKURI:**		

NATIONAL INSTITUTE OF SIDDHA AYODHIDOSS PANDIDHAR HOSPITAL, CHENNAI – 47.

AN OPEN TRIAL OF RASAPRALAYA CHENTHURAM AND NAVANATHA SIDDHAR THYLAM FOR THE TREATMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

FORM III – PATIENTS DAILY PROGRESS CHART

1. OP/ IP NO: **2. Bed no:** **3. Sl. No:** **4. Name:** **5. Age:** **6. Gender:**

7. Date of Admission: **8. Date of Purgation:** **9. Date of Discharge:**

Sl. No	Date	Pain in smaller jts	Pain in major jts	Swelling in smaller jts	Swelling in major jts	Symmetrical involvement	Restricted movement	Stiffness + after rest	Morning stiffness	Loss of appetite	Tenderness	sleeplessness	Naadi	Sparisam	Malam	Neikuri
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																

Lecturuer **HOD**

Sl. No	Date	Pain in smaller jts	Pain in majot jt	Swelling in smaller jt	Swelling in major jt	Symmetrical involvement	Restricted movement	Stiffness + after rest	morning Stiffness	Loss of appetite	Tenderness	Sleeplesness	Naadi	Sparism	Malam	Neikuri
9.																
10.																
11.																
12																
13.																
14.																
15.																
16.																
17.																
18.																
19.																
20.																

Lecturuer **HOD**

A PILOT OPEN CLINICAL TRIAL OF SIDDHA DRUGS *RASAPRALAYA CHENTHURAM* AND *NAVANATHA SIDDHAR THYLAM* IN THE TREATMENT OF *UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)*

CONSENT FORM

Certificate by Investigator

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date: _____ Signature: _____

Name: _____

Consent of Patient

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of *Rasapralaya chenthuram and Navanatha siddhar thylam* for the management of *Uthiravatha suronitham (Rheumatoid arthritis).*

Date: _____ Signature_____

Name: _____

Date: _____ Signature of witness: _____

Name: _____

Relationship: _____

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